EXHIBIT 5

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

NEONODE SMARTPHONE LLC,
Patent Owner,

Case IPR2021-01041
Patent 8,095,879

PATENT OWNER RESPONSE

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2004	Complaint (June 8, 2020), in the matter of *Neonode Smartphone, LLC* v. *Apple Inc.,* Dkt. #1, Case No. 6:20-cv-00505, United States District Court for the Western District of Texas, Waco Division [Neonode-Apple-Complaint]
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I. INTRODUCTION

The '879 patent, filed in 2002, is not just any patent. When Neonode introduced its N1 phone in 2002, years before competitors like Petitioner Google and Apple, it was widely recognized as the first smart phone to use swipe gestures:

Figure 3. The Neonode N1 was the first mobile to use swipe gestures [46]

Ex. 2040 [Hollatz-Dissertation] 8; *see also* Section II.A (additional evidence). The N1, and its swiping user interface in particular, were widely praised in gushing terms as "simply amazing," "extremely intuitive," and nothing like the "dreaded gestures" of prior pen-based systems, like the references Petitioner relies upon here. Executives from Samsung called it "the future of mobile phones" and licensed its technology. Ex. 2055 [Bystedt-Decl.] ¶ 9.

Petitioner fails to cite any reference that even remotely resembles the claimed invention. Petitioner's Grounds 1-3 are centered on Robertson, a reference about 1991-era networked desktop computers using the X window

system, but Petitioner fails to even prove that Robertson is analogous art. *See* Section III.A. Even if that could be overlooked, Petitioner fails to prove that Robertson discloses activating a function by "gliding … away." *See* Section III.B. Instead, Robertson is the quintessential example of the old, stylus-based devices whose "dreaded gestures" observers distinguished from Neonode phones. Petitioner also fails to prove that Robertson discloses the limitation "wherein the representation consists of only one option for activating the function," because it operates just like the Hirshberg reference the Applicant distinguished in prosecution. *See* Section III.C. Petitioner also fails to prove that the Robertson-Grounds disclose the preamble, which Petitioner does not dispute is limiting. *See* Section III.D.

Petitioner's Grounds 4-6, based on Tarpenning, likewise fail. Indeed, the Board noted its "doubt" that the Tarpenning-Grounds render the claims obvious. *See* Section IV; Paper 19 [Institution-Decision] 41. While activation by "gliding … away" goes to the heart of the claimed invention, and was the subject of much praise, Tarpenning does not disclose the concept of "gliding … away" at all. Instead, Tarpenning activates its keys by simply pressing them. In arguing that a POSITA would have modified Tarpenning to activate its keys by "gliding … away," Petitioner is importing this concept out of thin air, quintessential hindsight.

To support a motivation, Petitioner similarly manufactures two imaginary "problems" in Tarpenning that have no basis in the record.

For all of these reasons, the claims should be affirmed.

II. SECONDARY INDICIA OVERWHELMINGLY SUPPORT A FINDING OF NONOBVIOUSNESS.

"Objective indicia of non-obviousness 'can be the most probative evidence of non-obviousness in the record, and enables the court to avert the trap of hindsight.'" *Institut Pasteur v. Focarino*, 738 F.3d 1337, 1346 (Fed. Cir. 2013); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983). Such "objective evidence... 'is not just a cumulative or confirmatory part of the obviousness calculus but constitutes independent evidence of nonobviousness.'" *Cheese Sys. v. Tetra Pak Cheese & Powder Sys.*, 725 F.3d 1341, 1353 (Fed. Cir. 2013). This is just such a case.

Neonode phone's swipe-based user interface, introduced in 2002—five years before Apple's iPhone—has been widely recognized by industry observers as the first of its kind and in gushing terms such as "quite obviously unique," "compelling and ... a user experience simpler than pretty much anything else that comes to mind," "simple and brilliant," "advanced simplicity," and "extremely intuitive." *See* Section II.A, *infra*. In fact, even Samsung's representatives, one of the leading players in the field, were visibly impressed with the demonstration of

Neonode's technology and licensed the application that issued as the '879 patent in 2005. *See* Section II.B, *infra*.

A. Neonode's Innovative Swiping User Interface, Years Ahead Of Competitors, Received Substantial Industry Praise.

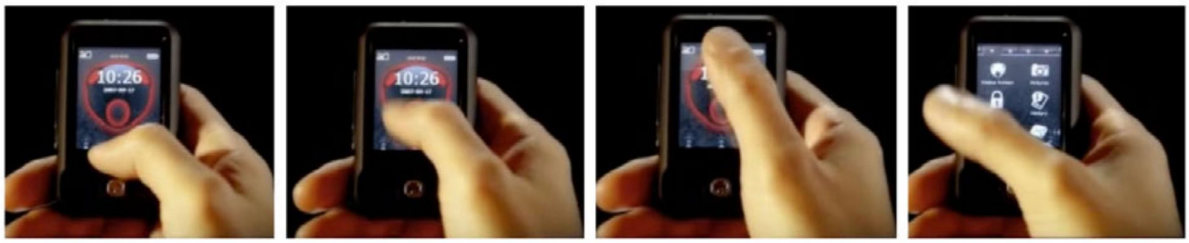
Neonode's N1 mobile phone was introduced in spring 2002 (Ex. 2055 [Bystedt-Decl.] ¶ 3) and its N2 was sold starting in 2007 (Ex. 2054 [Martensson-Decl.] ¶ 6). From its inception, the core distinguishing feature of Neonode's phones was their swipe-based user interface. Neonode specifically touted its "specially designed interface" that allows "you to easily access the different applications by using simple sweeping gestures ... on the screen." Ex. 2020 [N2-Advertisement-Video] (00:27-00:35); *see also id.*, (00:45-00:51) ("And you can easily access all of the Neonode N2's content by using the seven available sweeps."). As Neonode explained, "there is nothing else you need other than your intuition." *Id.*, (01:20-01:27); Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 38.

The swipe gestures touted in Neonode phones are the "gliding … away" gesture upon which the '879 and its claims are centered. Ex. 2008 [Shain-Decl.] ¶¶ 4-6; Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 39; Section III.A, *infra*. Per the '879's Summary of the Present Invention, the '879 concerns making a "user-friendly interface" for a handheld device that is "simple to use even for inexperienced users" and provides "a simple way to make the most commonly used functions for navigation and management available." Ex. 1001 ['879] 1:49-61.

The claimed invention addresses this problem by claiming a user interface for a mobile handheld computer unit that includes a touch sensitive area that includes a representation of a function, wherein "the representation consists of only ***one option for activating the function***" and wherein an object (*e.g.*, a thumb) touches the touch sensitive area where the representation is provided after which the "object," the thumb in our example, "***glid[es] along*** the touch sensitive area away from the touched location, wherein the representation of the function is not relocated or duplicated ***during the gliding***." In other words, the representation presents the user with one option of what to activate (*see* Section III.C, *infra*), and the activation is performed by simply using an object such as a finger to glide away from the representation of a function (*i.e.*, swiping).

The Applicant also equated the "gliding ... away" motion with "swiping." Ex. 1002 [Prosecution-History] 273 ("the touch-and-glide thumb movement, variously referred to as 'swiping,' ... 'gliding' ..."); 390 (similar); Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 40. The Applicant also specifically referenced and provided a link to its promotional video for a commercial embodiment, the Neonode N2 phone, and asked the Examiner to "view the demonstration video … prior to reviewing Applicant's arguments …." Ex. 1002 [Prosecution-History] 214-215; Ex. 2020 [N2-Advertisement-Video]. As the screen shots below from the video show, the "gliding … away" gesture is similar to what many today's systems

refer to as a "swipe" gesture. Specifically, the thumb is placed on a representation of a function (an icon) and through a swiping motion, the menu screen opens:



See Ex. 2020 [N2-Advertisement-Video] (screenshots from 00:26-00:27). Patent Owner respectfully requests that the Board review the brief video for a demonstration of the seamless "gliding … away" motion. Such gliding corresponds to what is shown, for instance, in Figure 2 which shows a thumb gliding along the touchscreen:

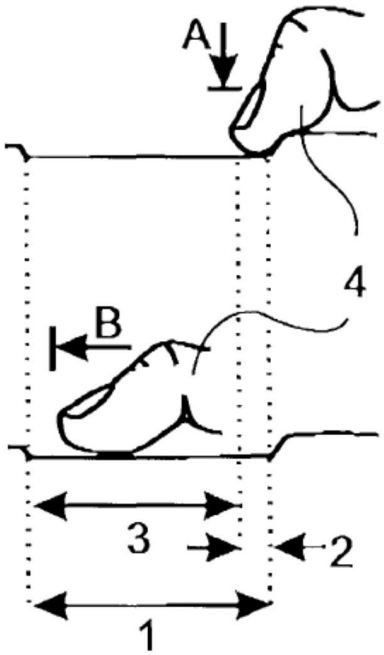
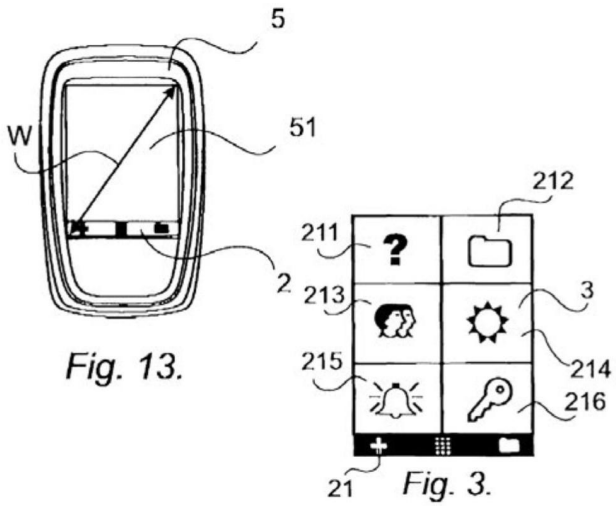


Fig. 2.

Moreover, the similarity between the '879's figures and Neonode's N1 and N2 phones is undeniable:



Ex. 1001 ['879] Figs. 3, 13; Ex. 2039 [PhD-Dissertation] 9, Figure 11; Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 41-42.

Addressing the problems of providing a "user-friendly interface" for a handheld device that is "simple to use even for inexperienced users" by activating functions via a simple glide (swipe) as claimed and as implemented in Neonode's N1 and N2 phones was widely praised. Pen Computing Magazine described Neonode N1 phone's swipe as "simple and brilliant" and "not" like the "dreaded gestures" of the pen computing devices:

> **Swipe, swipe, swipe**
>
> You see, instead of the usual menus and pulldowns, most operations are performed by sweeps of your finger—usually your thumb—across the

> surface of the Neonode's display. […] ***If this sounds like the dreaded "gestures" that never really caught on in pen computing, it's not***. The swipes are much simpler, there are only a few, and they are consistently used throughout all applications. The idea here is to let you hold a phone in the palm of your hand and operate it entirely with your thumb. ***No need to*** push buttons, view tiny menus, ***pull out a tiny stylus***, or use scrollwheels, rockers ***or other such vexing miniature controls***. […] ***Neonode's swiping interface is [] simple and brilliant***.

Ex. 2013 [Pen-Computing-Magazine-N1-Phone-Review] 2-3. As the article concludes:

> What's the bottomline? ***The Neonode phone is quite obviously unique***, ... ***The user interface is compelling*** and it's easy to see how just a bit more development could provide almost total consistency and thus ***a user experience simpler than pretty much anything else that comes to mind. The speed is simply amazing. That's the way a phone should operate***."

Id., 5; Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 43.

Other technology reviewers in the field were similarly impressed with the "extremely intuitive" swipe-based gesture (Ex. 2031 [Trend-Hunter-Article]), calling it "advanced simplicity" (*id.*, 1). *See also* Exs. 2033 [tnkgrl-Media-post] 1 ("I've been playing with my N1m on and off, and I'm very impressed! It's definitely a best kept secret device – Neonode's touch-based user interface with gesture recognition ... is extremely intuitive ..."); 2031 [Trend-Hunter-Article] 1

("[The N2] ***has the most advanced touchscreen available***, and has no buttons ... 'Neonode N2 is designed for advanced simplicity. You do everything on-screen, simply and conveniently, with just one finger,' Infibeam says. 'The combination of an optical touch screen and specifically designed user interface makes access to all features and content of your Neonode N2 both quick and easy.'"); 2032 [Trend-Hunter-About], 2034 [tnkgrl-Media-About]; Ex. 2035 [iPhone-Killer] 2 ("the N2 from Neonode Inc. – is the strongest contender for the title of 'iPhone killer,' ... 'They've come out with a kick-ass device'... the [N1's] screen reacts to the intuitive passage of a finger over the screen to initiate basic phone, Web browser and multimedia functions."); Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 44. Mr. Bystedt, who was at Neonode, likewise confirms that there were numerous articles about the N1 phone, particularly its gesture-based touch screen user interface. Ex. 2055 [Bystedt-Decl.] ¶ 3.

This well-deserved praise did not only come from observers. Following Neonode's demonstration of its N1 mobile handset in spring 2002 at the CeBIT trade show in Germany, Neonode and the N1 became famous in Stockholm and internationally. Ex., 2055 [Bystedt-Decl.] ¶ 3. In the Stockholm tech and startup business community at that time, Neonode's N1 was the talk of the town. *Id.* Furthermore, both Sir Christopher Gent, the CEO of Vodaphone, and senior executives from Samsung Mobile, came to Stockholm to meet with Neonode. *Id.*,

¶ 8. The excitement surrounding the phone was focused on its novel gesture-based user interface. Ex. 2056 [Backlund-Decl.] ¶¶ 11-12; Ex. 2055 [Bystedt-Decl.] ¶ 3.

Senior management at Samsung's mobile telecom division were extremely impressed by Neonode's N1, and in early 2005 began discussions with Neonode about licensing the N1's gesture-based user interface and touch screen technology. Ex. 2055 [Bystedt-Decl.] ¶ 9. Ki-Tai Lee (K. T. Lee), head of Samsung's mobile telecom division, presciently told Neonode that he believed Neonode's intuitive user interface was "the future of mobile phones." *Id.* Neonode had many hours of meetings with Samsung, including one in London, attended by Marcus Bäcklund, Thomas Ericsson, and Per Bystedt. *Id.* Mr. Lee told Samsung's negotiators—in Neonode's presence—that "we need this," referring to the Neonode's N1 gesture-based user interface and the license for the user interface. *Id.* And, as described below, Petitioner Samsung put its money where its mouth was, paying significantly to license Neonode's technology. *See* Section II.B, *infra; see also* Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 45.

Later, when Apple introduced the first iPhone in 2007 (Ex. 2036 [Wikipedia-iPhone-Release-Dates]),[1] observers and others quickly recognized its use of the brilliant and simple swipe interface that Neonode had developed and introduced five years earlier:

> Listening to Apple's claims of all the patents covering the iPhone's user interface one might assume the iPhone broke completely new ground and went where no phone had ever gone before.
>
> That is not entirely so. Neonode, a small Swedish company ... announced the Neonode N1 back in 2002. ... It did not use a stylus either. Instead, it used a swipe and tap system on a novel touch screen that used a grid of infrared beams to sense finger movement.
>
> ... And if the iPhone's swipes and taps seem futuristic, they are not. Neonode has been using them since the first N1 came out. In fact, the company's Neno user interface is based entirely on swipes and taps.

Ex. 2024 [Pen-Computing-Magazine-N2-Phone-Review] 1. The author continued,

> [I]t must be vexing to see Apple essentially claim ownership of concepts the Neonode phone has been using for at least five years.

Id., 9; Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 46.

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[1] The first commercial phone utilizing Petitioner's Android operating system was not released until September 2008. Ex. 2037 [Wikipedia-Android-Operating-System] 1.

In fact, some users have gone so far as to make videos about how Neonode's "sweeping touch screen" was the "original," to the iPhone "copycat":

Ex. 2038 [User-Video] (at 0:04, 0:06, 0:12, and 0:17); Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 47.

In accord, numerous academic papers and industry analysts recognized that Neonode's swipe-based user interface was ***the*** pioneer in the field, and the "first smartphone to support touch gestures":

Figure 11: The first smartphone to support touch gestures: The Neonode N1 [Source: http://www.gsmhistory.com/vintage-mobiles/fig-36-neonode-n1/]

Ex. 2039 [PhD-Dissertation] 9, *see also, id.*, ("The Neonode N1 (Figure 11), available in 2004, ***was the first smartphone to use a touchscreen as primary input and to support touch gestures*** for several functions."); Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 48-49.

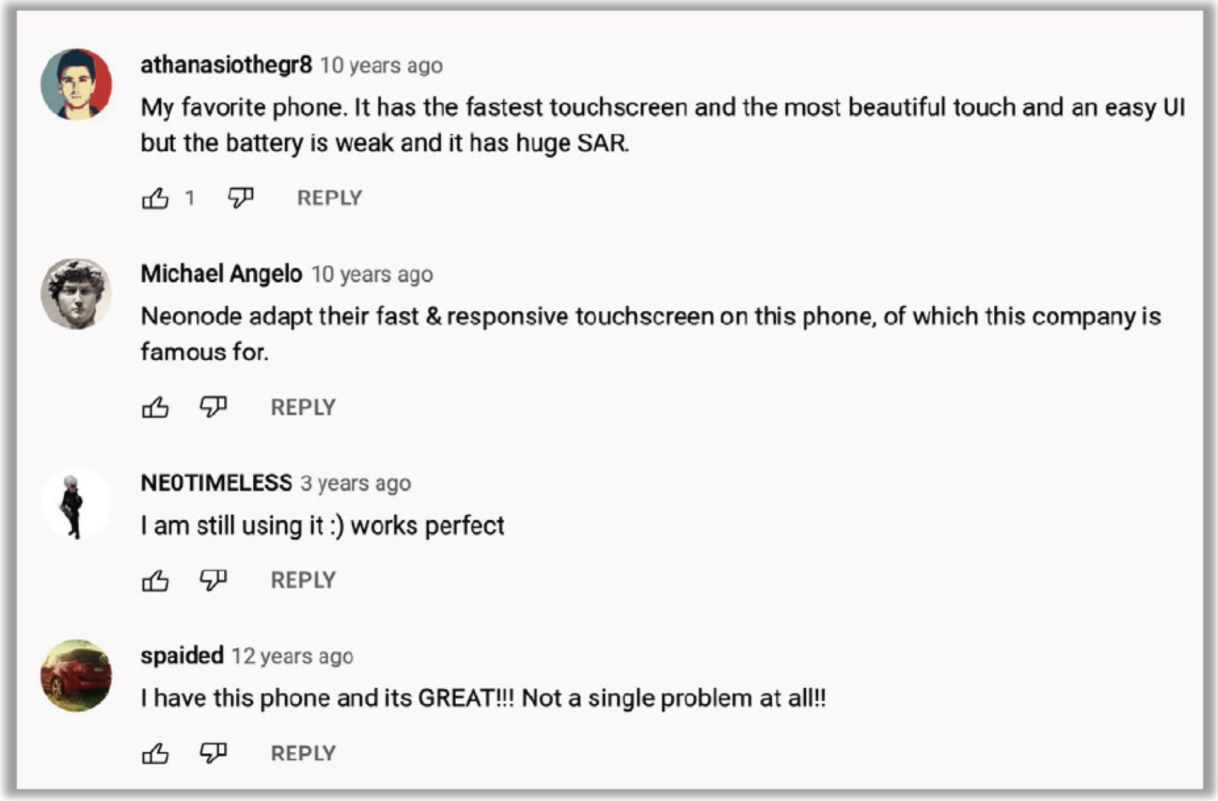
Another paper similarly recognized that "The Neonode N1was ***the first mobile to use swipe gestures***":

Figure 3. The Neonode N1 was the first mobile to use swipe gestures [46]

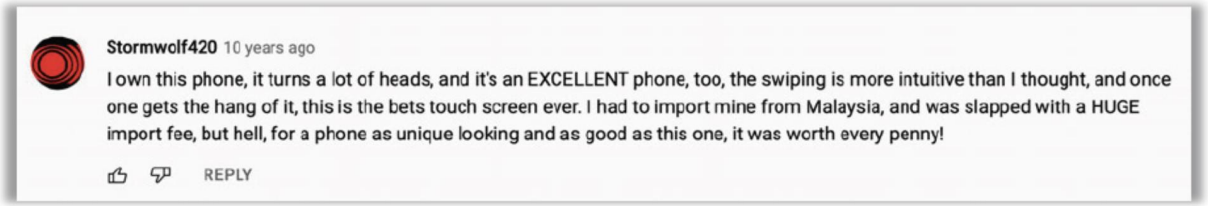
Ex. 2040 [Hollatz-Dissertation] 8, *see also, id.*, ("The Neonode N1 was the first commercially available mobile device to make extensive use of swipe gestures

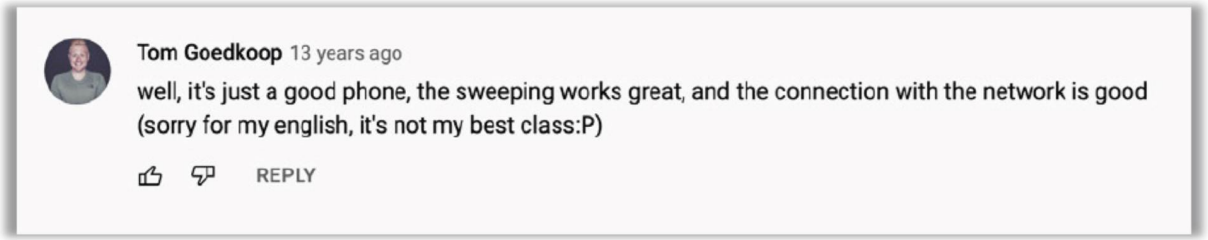
appropriate for one-handed use, including a browser that scrolled content vertically with swipes."); Ex. 2041 [Neonode N1m video-review] 0:11-22 ("The reason I'm reviewing the Neonode N1m is because it's an ancestor of the iPhone it is one of the first devices to use purely a finger-based interface ..."); Ex. 2042 [Ars-Technica-Article] 8 ("[Neonode's N1m] supported swiping gestures in addition to individual taps.").

Neonode's N1 and N2's user interfaces were also widely praised by users, particularly for their use of swiping. Just a small sampling of examples is below:



Ex. 2043 [Neonode-Comments-2];





Ex. 2044 [Neonode-Comments-1]; *see also* Ex. 2045 [Neonode-Comments-3].

As courts have recognized, such significant evidence of praise centered upon the claimed "gliding ... away" user interface is compelling evidence of nonobviousness. *Institut Pasteur*, 1347 ("[I]ndustry praise ... provides probative and cogent evidence that one of ordinary skill in the art would not have reasonably expected [the claimed invention]."); *Apple Inc. v. Samsung Elecs. Co. Ltd.*, 839 F.3d 1034, 1053 (Fed. Cir. 2016) (*en banc*) ("[e]vidence that the industry praised...a product that embodies the patent claims weighs against an assertion that the same claimed invention would have been obvious."). Such praise is especially probative where, as here, it comes from industry participants, including

competitors like Samsung. *Id.* ("Industry participants, especially competitors, are not likely to praise an obvious advance over the known art.").

B. The Commercial Success And Licensing Of The Neonode Technology Further Demonstrate The Novelty Of The Claims.

As discussed, Samsung, after meeting with Neonode, expressed substantial interest in the swipe-based user interface and described it as "the future of mobile phones" and Samsung recognized, "we need this." Ex. 2055 [Bystedt-Decl.] ¶ 9. This was not just talk. Samsung signed a license agreement in July 2005, licensing the application from which the '879 issued, and providing for [redacted] Ex. 2014 [Samsung-License-Agreement]; Ex. 2055 [Bystedt-Decl.] ¶ 10; Ex. 2056 [Backlund-Decl.] ¶¶ 13-14. Indeed, in 2020 and 2021, Samsung is reported to have sold 256.6 and 272 million units, respectively (Ex. 2048 [Smartphone-Shipments]), a total of 528.6 million units in just two years.

[2] The agreement was executed in July 2005 when one euro was about $1.20 (specifically $1.2060 on July 18, 2005). *See* Ex. 2046 [Euro-Dollar-Exchange-Rate]). 2€ was equal to about $2.40 in 2005, or about $3.49 in 2022. *See* Ex. 2047 [Inflation-Calculator].

The interest from giants like Samsung was supported by the successful sales of Neonode phones. Neonode sold tens of thousands of its N1 and N2 phones to operators around the world, from Mexico to Belgium to India—which is impressive for a small startup company especially considering the fact that Neonode did not have the backing of any cellular network carrier, did not have manufacturing resources and had to sell its phone at up to $1,000, which was three times the price of the most expensive phones of the time. Ex. 2054 [Martensson-Decl.] ¶ 6; Ex. 2010 [Neonode-Sales]; Ex. 2014 [Samsung-License-Agreement]; Ex. 2055 [Bystedt-Decl.] ¶ 11; Ex. 2056 [Backlund-Decl.] ¶¶ 8-10; Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 45, 49.

Thus, secondary indicia strongly supports the novelty of the claims. *See* Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 50.

III. THE ROBERTSON-GROUNDS FAIL FOR FIVE INDEPENDENTLY SUFFICIENT REASONS.

The Petition presents three obviousness grounds (Grounds 1-3) based on Robertson but only the first ground (Robertson/Maddalozzo) challenges independent claim 1. Grounds 2-3, thus, depend upon Ground 1. Petitioner fails to prove that the Robertson/Maddalozzo combination renders the claims obvious for at least five independently sufficient reasons.

A. Petitioner Failed To Prove Robertson Is Analogous Art.

To be eligible as prior art, a reference must be analogous to the patent-at-issue. *In re Klein*, 647 F.3d 1343, 1348 (Fed. Cir. 2011) ("A reference qualifies as prior art for an obviousness determination ... only when it is analogous to the claimed invention."); *Penda Corp. v. U.S.*, 29 Fed. Cl. 533, 557-58 (Fed. Cl. 1993) ("Non-analogous art is too remote to constitute prior art.") (citations omitted); *Victoria's Secret Stores LLC v. Andra Grp., LP*, IPR2020-00853, Paper 14, 3 (Dec. 11, 2020) (analogous art is a "threshold inquiry"); *Kingston Tech. Co., v. Polaris Innovations Ltd.*, IPR2016-01623, Paper 33, 23 (PTAB Feb. 9, 2018) (similar).

Petitioner bears the burden of proving that Robertson is analogous art to the '879. *SCHOTT Gemtron Corp. v. SSW Holding Co., Inc.*, IPR2013-00358, Paper 106, 26 (PTAB Aug. 20, 2014) ("Petitioner bears the burden of showing by a preponderance of evidence that the asserted prior art references are analogous art …"); *In re Nat. Alts., LLC*, 659 Fed. Appx. 608, 613-14 (Fed. Cir. 2016) (nonprecedential). A petitioner is required to make this showing in the petition and the Board regularly denies institution where a petition fails to demonstrate a reference is analogous. *Vanguard Prods. Grp., Inc. v. Invue Sec. Prods. Inc.*, IPR2020-00018, Paper 7, 14-18 (Mar. 31, 2020); *Holt's Cigar Holdings, Inc. v. Boveda Inc.*, IPR2015-01844, Paper 7, 9-10 (Mar. 9, 2016); *Kaspersky Lab, Inc. v.*

Uniloc USA, Inc., IPR2015-00178, Paper 10, 12-13 (Apr. 21, 2015); *Vizio, Inc., v. Nichia Corp.*, IPR2017-00558, Paper 9, 14-17 (July 7, 2017).

To be analogous art, a reference must be either (1) from the same field of endeavor as the patent-at-issue, or (2) reasonably pertinent to the particular problem with which the inventor is involved. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004); *see also In re Clay*, 966 F.2d 656, 658-59 (Fed. Cir. 1992).

The analogous art test is strictly applied and even art with substantial similarities to the patent-in-question may not be analogous. *Wang Labs., Inc. v. Toshiba Corp.*, 993 F.2d 858, 864-65 (Fed. Cir. 1993) (memory module for industrial controller not analogous art to memory module for personal computers); *Klein*, 647 F.3d at 1351-52 (devices for mixing blood with plasma and for mixing hair rinses not analogous to mixing device for nectar in bird and butterfly feeders); *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992) (fasteners for garments not analogous to fasteners for hose clamps).

Clay, the leading analogous art case, is instructive. Under review in *Clay* was the BPAI's determination that a patent concerning a gel for use in the petroleum industry was analogous to another patent concerning a gel for use in the petroleum industry. *Clay*, 966 F.2d at 657-60. Both patents were owned by the same company, Marathon Oil. *Id.*, 658. The Federal Circuit found the Board's determination that the art was analogous to be clearly erroneous. *Id.*, 658-60.

As to whether the art-in-question (Sydansk) was within the same field of endeavor, the Court found that the Board clearly erred in finding Sydansk was analogous because the patent-in-question's "field of endeavor is the *storage* of refined liquid hydrocarbons" whereas "[t]he field of endeavor of Sydansk's invention, on the other hand, is the *extraction* of crude petroleum." *Id.*, 659 (italicization in original); *see also Wang Labs.*, 993 F.2d at 864 ("The Allen-Bradley art is not in the same field of endeavor as the claimed subject matter merely because it relates to memories. It involves memory circuits in which modules of varying sizes may be added or replaced; in contrast, the subject patents teach compact modular memories.").

Clay similarly found that it was "clearly erroneous" to consider Sydansk to be reasonably pertinent because a POSITA "would not reasonably have expected to solve the problem of dead volume in tanks for storing refined petroleum by considering a reference dealing with plugging underground formation anomalies." *Clay*, 966 F.2d at 660; *see also Wang Labs.*, 993 F.2d at 864 (prior art memory modules not analogous to patented memory modules).

Neither Petitioner nor Dr. Wobbrock make any attempt to demonstrate that Robertson is analogous to the '879. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 53. Indeed, the phrases "analogous art," "field of endeavor," and "problem" are not even used in the Petition. Consequently, Petitioner has failed to satisfy its burden

of demonstrating that Robertson is analogous and, thus, the Petition's Robertson-Grounds should be denied. To the extent that more is needed, as discussed below, there is no reason to believe that Robertson is in the same field of endeavor as the '879 or reasonably pertinent to the problem with which the '879's inventors were involved.

1. Petitioner Fails To Demonstrate That Robertson Is In The Same Field Of Endeavor As The '879 Patent.

As discussed, Petitioner did not attempt to prove that Robertson is in the same field of endeavor as the '879. Petitioner should not be permitted to attempt to make its case for the first time in its reply. If more is needed, there is no reason to believe that Robertson is in the same field of endeavor as the '879.

To discern the field of endeavor, courts have looked to the specifications of the patent and the alleged prior art reference and particularly to the respective "Field of the Invention" and/or "Background of Invention" sections. *See, e.g.*, *Airbus S.A.S., Firepass Corp.*, 941 F.3d 1374, 1381, n. 8 (Fed. Cir. 2019) ("[T]he specification of each reference includes a 'Field of the Invention' section that distinctly describes each applicable field of endeavor."); *In re Wood*, 599 F.2d 1032, 1036 (CCPA 1979) (determining field of endeavor based on "Background of Invention"); *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238 (Fed. Cir. 2010) (finding reference concerning padlocks to be in the same field of endeavor where the "patent itself refers to 'the prior art padlock' in the background of the

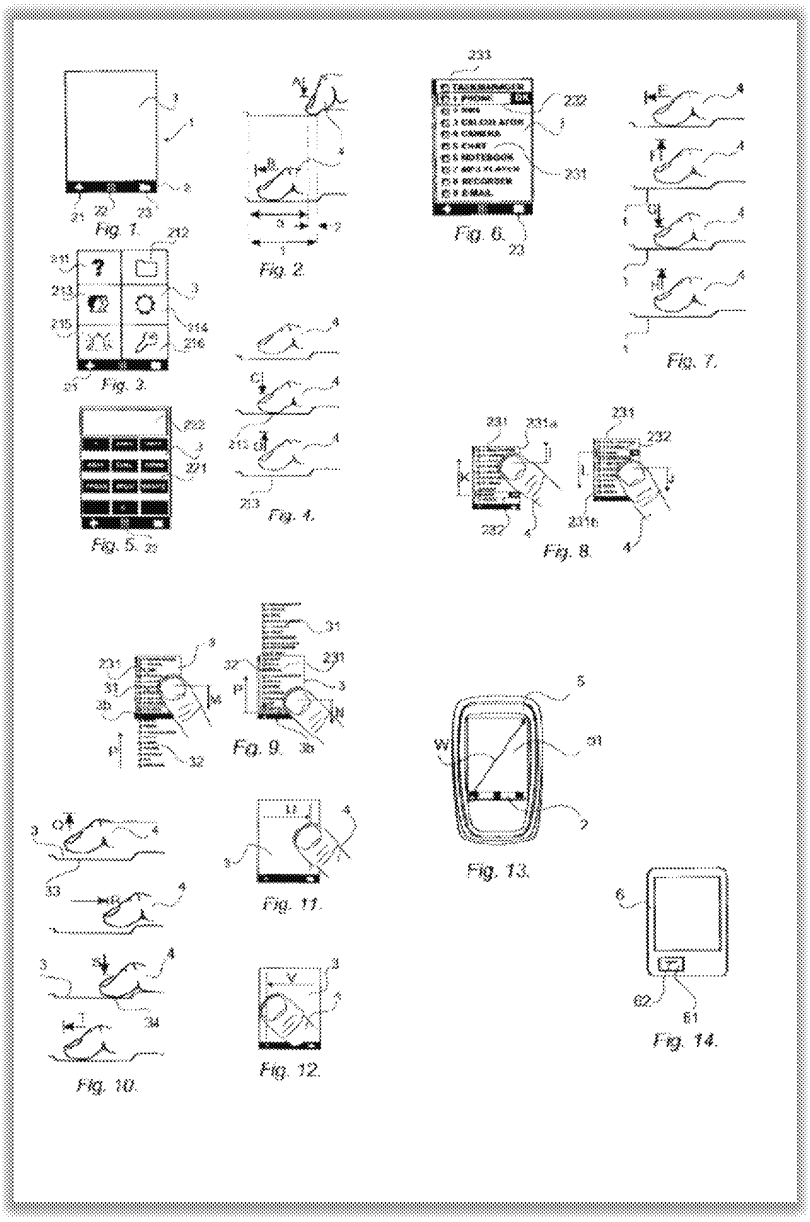
invention."). As demonstrated in *Clay* and *Wang Labs.*, discussed above, the mere presence of technological similarities between a prior art reference and the patent-at-issue is insufficient to show the two are in same field of endeavor. *See also Airbus S.A.S.*, 941 F.3d at 1376-77, 1380-81 (low-oxygen environment for athletic training/therapy not in the same field as low-oxygen fire suppression system).

As Dr. Rosenberg explains, the '879's field of endeavor is "user interfaces for mobile handheld computer units" and is directed at "inexperienced users" using such consumer devices:

> The '879 is titled "User Interface For Mobile Handheld Computer Unit" and its Abstract explains that "[t]he present invention relates to a user interface for a mobile handheld computer unit …." The "Technical Field" similarly defines the invention as "relat[ing] to a user interface for a mobile handheld computer unit." *Id.*, 1:6-7. The '879 further explains that it seeks to address the problem of "providing a user interface that is suitable for small handheld computer units." *Id.*, 1:41-43; *accord id.*, 1:49-61. The '879's "Solution" is then presented "with the starting point from a user interface for a mobile handheld computer unit." *Id.*, 1:65-67. In describing the invention, the '879 also states that "[t]he user interface of the present invention is specifically adapted to be used with a small computer unit where the size of the touch sensitive area is in the order of 2-3 inches." *Id.*, 3:1-3. The '879 also highlights that one of the advantages of the invention "reside[s] in the ability to establish a user friendly interface for small handheld computers …." *Id.*, 3:10-15. In accord, every embodiment of the '879 addresses a user

interface for a mobile handheld computer unit. *See, e.g., id.*, 3:50-51; Figs. 1, 11-14; 6:4-6.

This is reflected in all 14 of the '879's figures as well, each of which depict a mobile handheld computer unit, its interface, and/or a user interacting with the device's interface:



Figures 3 and 13 (the '879's cover image), for instance, bear a striking resemblance to the Neonode N1:

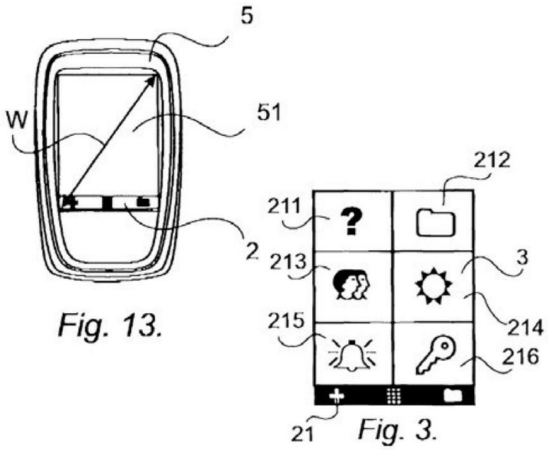


Fig. 13. Fig. 3.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 54-57.

Similarly, the Applicant during prosecution repeatedly emphasized that the invention is designed to be operated with one hand:

> [T]he Applicant repeatedly explained that "the movement patterns described in the claims of the present application allow the use of the user interface with one hand only and navigation of the user interface with the thumb of that hand." Ex. 1002 [Prosecution-History] 82; 81 (similar), 116 (similar). The Applicant also further emphasized this point by explaining that while the prior art "[r]equires one hand to hold the device and another hand to perform the stylus movement," in the inventive system "[t]he same hand may be used to hold the device and perform the thumb movement." *Id.*, 301; *see also id.*, 339-340 (same).

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 58.

The commercial embodiment of the invention was similarly implemented in a mobile handheld computer unit, with a size of only a few inches, as shown in the screen shot below from Ex. 2020 [N2-Advertisement-Video] (0:10 sec.):

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 59.

In contrast, Robertson's system concerns a user interface for ***X window desktops***:

> Robertson's system is designed for a client-server network of desktop computers in a setting such as a research laboratory, where collaborating users are sophisticated programmers who design XButtons and even share their designed XButtons together. *See* ¶¶ 130-131, *infra* (discussion of X window system).
>
> Robertson is a user interface kit that is custom-made for "an X window system ***desktop***." Robertson's title is "Buttons as First Class Objects on an X ***Desktop***" and its Abstract explains that "[a] high-level user interface toolkit, called XButtons, has been developed to support on-

screen buttons as first class objects on an X window system ***desktop***." *Id.*

Robertson's summary of its paper similarly explains that "XButtons opens many possibilities for end-user tailoring ***of the desktop***." Ex. 1005 [Robertson] 43. Robertson further summarizes its paper as having "defined the notion of ***Desktop*** Buttons (DButtons), or first class button objects on a ***desktop***." *Id.* As previously noted, the word "desktop" appears approximately 40 times in Robertson, while the words "mobile" and "handheld" do not appear at all.

Therefore, a POSITA would have recognized that, unlike the '879's field of endeavor of a user interface for mobile handheld computer units, Robertson's field of endeavor is a user interface for X window desktops.

This distinction is highlighted by comparing a photo of a typical computer laboratory in the early 1990s (*e.g.*, Robertson) with Neonode's handheld mobile unit:

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 60-64.

2. Petitioner Fails To Demonstrate That Robertson Is Reasonably Pertinent To The Problem With Which The Inventors Of The '879 Patent Were Involved

Petitioner also fails to make any attempt to demonstrate that Robertson is "reasonably pertinent to the problem with which the ['879's] inventors" were involved. Robertson and the '879 are directed towards entirely different problems.

In determining whether a reference is reasonably pertinent, "the purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve" and if the reference "is directed to a different purpose, the inventor would accordingly have had less motivation or occasion to consider it." *Clay*, 966 F.2d at 659; *Donner Tech. LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1359 (Fed. Cir. 2020) ("when addressing whether a reference is analogous art with respect to a claimed invention under a reasonable-pertinence theory, the problems to which both relate must be identified and compared.").

Robertson is directed towards the problem of allowing an end-user to create and adapt user tailorable stand-alone buttons in an X windows system desktop:

> Physical buttons have been around since the first electrical devices were built. They are so common that we never think about them; push a button and some action will take place. On-screen buttons in one form or another have been around since the mid-1960's. Their appeal as a human computer interaction technique is obvious; arbitrary actions can

> be invoked by a simple interaction with a display object that looks pressable and the style of interaction is familiar to everyone. It is no surprise that many computer systems use on-screen buttons as part of their interface. ***On the other hand, very few systems provide buttons that stand on their own ("first class objects") or that allow an end-user to create and adapt buttons for their own needs. This kind of user tailorable button is what this paper focuses on.***

Ex. 1005 [Robertson] 35; *see also id.*, Abstract ("A high-level user interface toolkit, called XButtons, has been developed to support on-screen buttons as first class objects on an X window system desktop."); Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 66..

In contrast, the '879 is directed towards the problem of creating a user interface in a small handheld computer unit that is: (1) "user-friendly" and adapted to handle a large amount of information and "different kinds of traditional computer-related applications," (2) that is "simple to use, even for inexperienced users," (3) that has "an easily accessible text input function," and (4) that "provide[s] a simple way to make the most commonly used functions for navigation and management available in the environment of a small handheld computer unit." Ex. 1001 ['879] 1:49-61; *see also*, 1:63-3:6 (describing "Solution" with focus on a simple to use user interface for a handheld mobile computer unit); 3:8 15 (describing "Advantages" as "Those advantages that can be primarily associated with a user interface or a computer readable medium according to the

present invention reside in the ability to establish a user-friendly interface for small handheld computers …"); Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 67.

As Dr. Rosenberg explains:

> The problem addressed by the inventors of the '879 is completely distinct from the problems that Robertson seeks to address, which is a result of the '879 being directed at novice users of a consumer mobile handheld device, whereas Robertson is directed towards allowing users to create stand-alone tailorable buttons in an X windows desktop system. The '879 is not concerned with creating "first class buttons." Ex. 1005 [Robertson] 35 ("very few systems provide buttons that stand on their own ('first class objects') …"). Nor is the '879 concerned with "user tailorable buttons." *Id*., ("This kind of user tailorable button is what this paper focuses on."). Nor is the '879 concerned with providing buttons that support "multiple actions." *Id*., Abstract. As I explain in ¶ 111, the reason Robertson's XButtons even support gestures is to permit them to provide users with multiple options of what action to initiate depending on the gesture. Otherwise, a simple tap or click was the general, standard way to activate a single-action button. In contrast, not only is the '879 not concerned with providing a user with multiple options of what action to activate on a buttons, but it expressly limits the invention to where "the representation consists of only one option for activating the function." Ex. 1001 ['879] cl. 1. In fact, this "advanced simplicity" and intuitiveness was a major point of praise among users of Neonode phones. Ex. 2031 [Trend-Hunter-Article] 1; Ex. 2013 [Pen-Computing-Magazine-N1-Phone-Review] 2-3.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 68.

Nor does the fact that Robertson, in the context of first-class buttons on X window desktops, discloses certain gestures render it analogous art. Instead, "a reference is only reasonably pertinent when it 'logically would have commended itself to an inventor's attention in considering his problem.'" *Clay*, again, found that it was "clearly erroneous" to find that one patent directed towards a gel utilized in the extraction of petroleum was analogous to another patent directed towards a gel utilized in the storage of that same petroleum even though both patents were owned by the same company. *Clay*, 966 F.2d at 657-60. Similarly, memory modules used for industrial purposes were not reasonably pertinent to a patent relating to memory modules used for personal computers. *Wang Labs*., 993 F.2d at 864. That one aspect of the reference may overlap matters addressed by a patent is insufficient to show that the reference is reasonably pertinent. *Polygroup Ltd. v. Willis Elec. Co., Ltd.*, IPR2016-01610, Paper 187, 31, 35-40 (PTAB Feb. 26, 2018) (rejecting argument that "structurally and functionally similar" electrical connectors in reference and patent made reference reasonably pertinent); *SCHOTT Gemtron Corp. v. SSW Holding Co., Inc.*, IPR2014-00367, Paper 62, 17 (PTAB May 26, 2015) ("[A] prior art reference in a separate field of endeavor will not be analogous art unless it is pertinent to *the entire problem* being solved by the challenged patent.") (emphasis in original).

Petitioner has provided no reason to find that Robertson is analogous to the '879. The evidence indicates that it is not. Consequently, the Petition's Robertson-grounds should be rejected.

B. Petitioner Fails To Prove That Any Of The Robertson Combinations Render Obvious The "Gliding … Away" Limitation.

The claims require "activating [a] function" via an "object" "***gliding*** along the touch sensitive area ***away*** from the touched location." The "gliding ... away" limitation (akin to swiping) was the subject of substantial public praise, commercial success, and licensing/acquiescence. *See* Section II.

Petitioner contends two gestures in Robertson—"flick-right" and "insert"—disclose "gliding … away." Pet., 25-29. Petitioner provides no explanation for why Robertson's "flick-right" and "insert" movements are "gliding ... away." Rather, Petitioner assumes that any movement constitutes "gliding ... away." Pet. 25-27. Petitioner, however, fails to substantiate its premise that any "movement" constitutes "gliding ... away"—a premise at odds with the plain meaning and the intrinsic record. *See* Section III.B.1. If more is needed, Petitioner wholly fails to prove that either Robertson's "flick-right" or "insert" movements constitute "gliding ... away." *See* Sections III.B.2-3.

1. Petitioner Fails To Substantiate Its Premise That Any "Movement" Is "Gliding."

Petitioner does not propose any construction of "gliding ... away," claiming "[n]o terms need to be construed to resolve unpatentability." Pet., 4. In contending that Robertson discloses "gliding … away," however, the Petition equates "gliding" with "movement" of Robertson's pen. Pet., 25-26 ("… the user touches the 'Phone' button (blue, representation) with the pen/stylus and ***moves (glides)*** the pen to the right …"); 27 (similar). Thus, the Petition treats "mov[ing]" and "glid[ing]" as synonymous. But, Petitioner does not present any analysis or evidence tending to show that any "movement" is "gliding ... away." This is just assumed without any analysis of the plain meaning or the intrinsic record. Petitioner's expert just parrots the Petition in this regard without any further analysis. *See* Ex. 1003 [Wobbrock-Decl.] ¶¶ 105-110.

As Dr. Rosenberg explains:

> As discussed Neonode's phones received rapturous praise as a consequence of its swiping-based user interface and the Applicant equated "gliding" with "swiping" in prosecution. This confirms that the particular type of movement is critical in designing a user interface. While "gliding" is a certainly a ***type*** of "movement," it does not follow that ***any*** "movement" is "gliding," particularly in the context of touch-based user interfaces. A "chicken" is a bird, but not every bird is a chicken. The plain meaning as supported by basic logic confirms that Petitioner's assumption that "gliding" and "moving" are synonymous

> is incorrect. Indeed, as I will discuss, numerous dictionaries confirm "gliding" and "moving" are not synonymous.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 71.

The intrinsic record reinforces this distinction. The prosecution history dispels any notion that the claimed "gliding … away" is simply any "movement" of the object (*e.g.*, thumb) away from the representation of the function. The pending claims during prosecution originally recited:

> "***moving*** in a direction ***from*** a starting point that is the representation [of a function] … ***to*** said display area."

Ex. 1002 [Prosecution-History] 201.

The "moving ... from ... to" limitation was rejected. In further prosecution and in explaining the gesture the Applicant sought to claim, the Applicant "encouraged" the Examiner to "watch the video demonstration of the N2 mobile phone/personal digital assistance device" "prior to reviewing Applicant's arguments." *Id.*, 214-215. As the screen shots from the video show, the "gliding … away" gesture is similar to what today's systems refer to as a "swipe" gesture, where, *e.g.*, the thumb is placed on a representation of a function (menu item with an arrow) and through a swiping motion, the menu screen opens:

See Ex. 2020 [N2-Advertisement-Video] (screenshots from 00:26-00:27).

In the subsequent office action, the Examiner acknowledged the "swiping" gesture of the claims, but recognized that the then drafted claims, simply required "moving" the object, and were thus too broad to limit the claims to a swipe/glide gesture. As the Examiner explained:

> The Examiner reviewed the demonstration as encouraged by the Applicant. ***In light of the video demonstration, the Examiner can now see the difference between the prior art of record and the present application.*** With that being said the Examiner feels that the limitations, as claimed, were reasonably interpreted and the current limitations are still too broad to suggest without research what was shown in the video demonstration.

Ex. 1002 [Prosecution History] 258.

In response to this guidance from the Examiner, the Applicant amended the claim from "***moving*** in a direction ***from*** a starting point that is the representation [of a function] … ***to*** said display area" to "***gliding*** along the touch sensitive area ***away*** from the location." *Id.*, 317-318. The Applicant noted that the amendment was made after an Examiner interview "to properly claim the present invention."

Id., 334. This change from "move ... from ... to" to "gliding ... away" was, thus, highly significant. Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 72-75; *see also Ajinomoto Co. v. ITC*, 932 F.3d 1342, 1351 (Fed. Cir. 2019) ("... when a word is changed during prosecution, the change tends to suggest that the new word differs in meaning in some way from the original word."). Consequently, the notion that "moving" and "gliding" are synonymous is contrary to the prosecution history. This distinction was overlooked by Petitioner's expert who did not "recall whether ["gliding … away"] was a point of focus that arose in [his] consultation of the prosecution history or not." Ex. 2018 [Wobbrock-Depo.] 98:21-99:12.

Thus, the underlying premise for Petitioner's argument that "moving" is synonymous with "gliding" is not supported by evidence or analysis and is contrary to the plain meaning, basic logic, and the intrinsic record. Petitioner, thus, failed to make its case in its petition as required. *Intelligent Bio- Sys., Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1367-68 (Fed. Cir. 2016).

2. Petitioner Fails To Prove That A "Flick" Is A "Gliding … Away" Gesture.

Petitioner's unsupported allegation that a "flick" is a "glide" is also contrary to the plain meaning, as supported by industry terminology and the intrinsic record. At a minimum, Petitioner failed to prove otherwise.

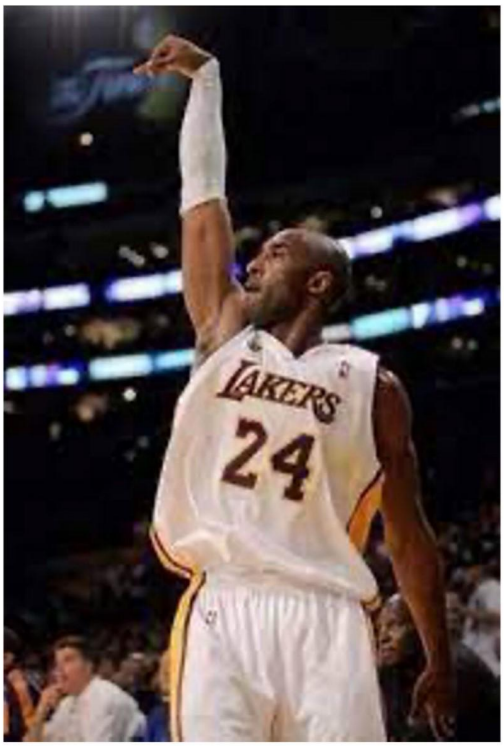
The Petition provides no analysis of the plain meanings of either "gliding" or "flick." Dictionary definitions, whether at the time of Robertson in 1991 or at

the time of filing of the '879 in 2002, define "flick" and "glide" differently: a "glide" is a "smooth," "effortless" motion, while a "flick" is a "sudden," "sharp" and "jerky" motion. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 77. Exemplary dictionary definitions are produced below:

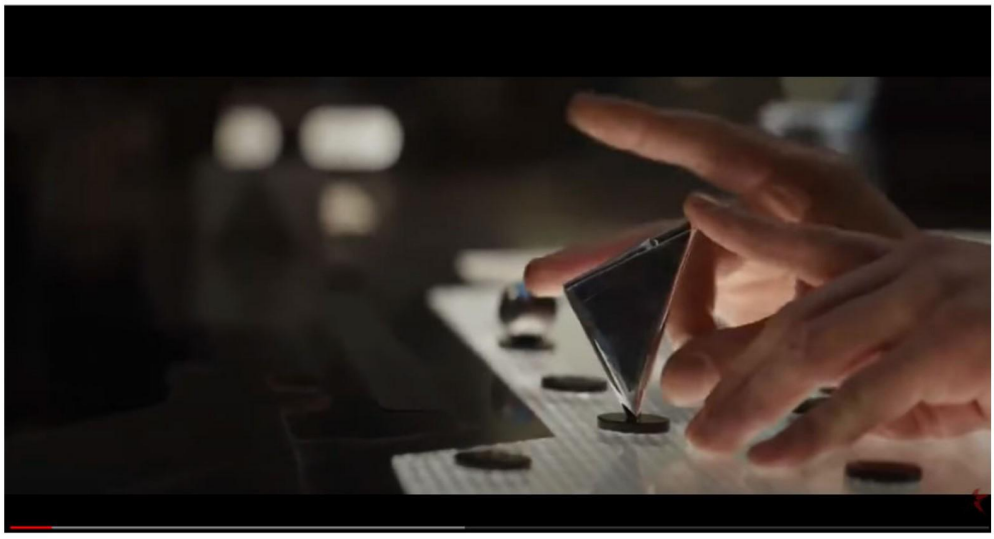
Dictionary		**"Flick"**	**"Glide"**
Merriam Webster [Ex. 2052]	1993	"a light sharp jerky stroke or movement"	"to move smoothly continuously and effortlessly"
American Heritage College Dictionary [Ex. 2050]	1997	"a light quick blow, jerk or touch"	"to move in a smooth effortless manner"
Oxford English Dictionary [Ex. 2057]	2002	"make or cause to make a sudden sharp movement"	"move with a smooth, quiet, continuous motion"
Oxford English Dictionary [Ex. 2049]	2012	"make a sudden sharp movement"	"move with a smooth quiet motion"

Further, in common usage, a "flick" is distinct from a "glide." Consider a flick of a finger:

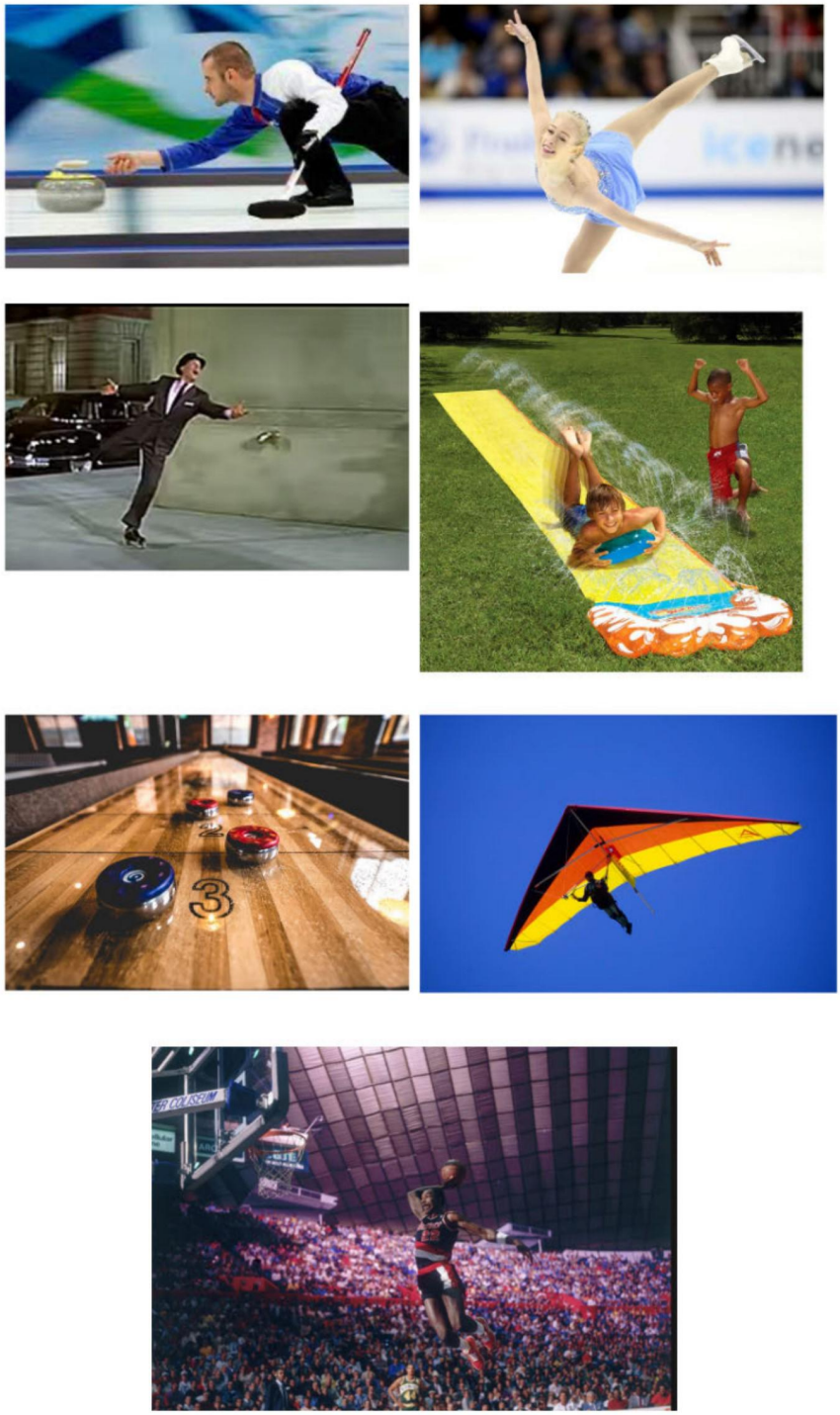
or a flick of the wrist:



or the game “Flick Football”:

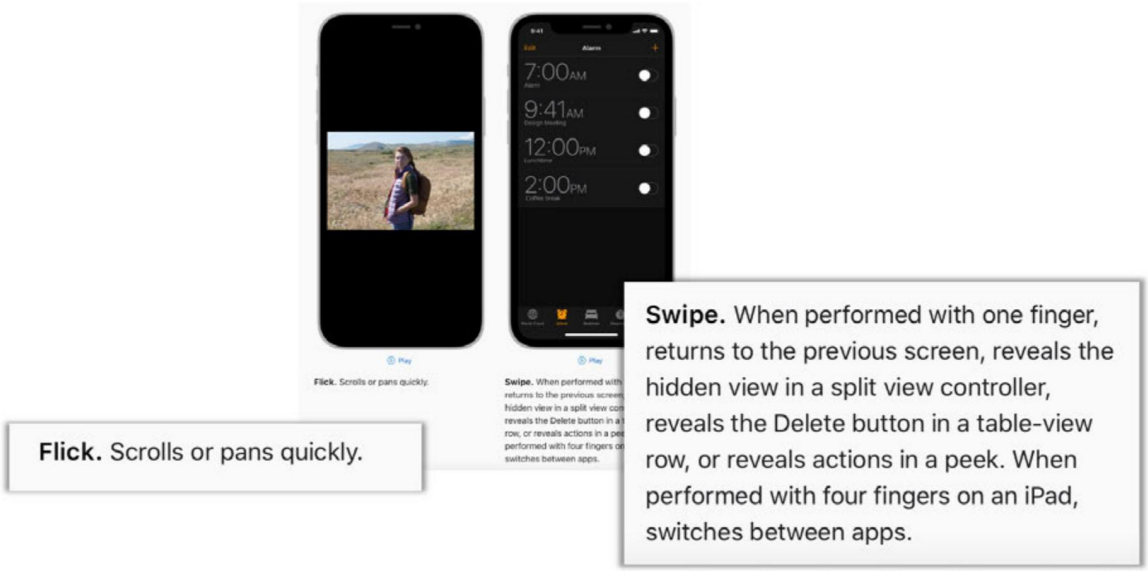


Now, for something completely different, let's consider "gliding":



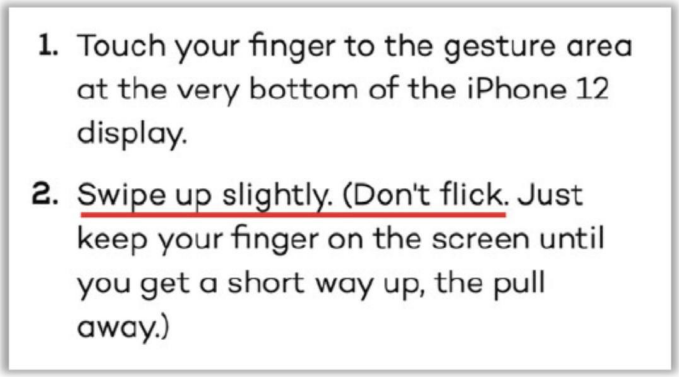
Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 78-79.

"Flick" and "glide" gestures are also distinguished by leading smart phone developers, including Apple and Petitioner Google. Apple's developer guidelines for human interface, reproduced below, distinguish between a "flick" and a "swipe" as distinct gestures performing different functions:



Ex. 2022 [Gestures] 4; *see also* Ex. 2029 [Terminology] 2 (identifying terminology used to describe various distinct gestures as "tap, flick, swipe, pinch, and drag."); Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 80.

iPhone users similarly recognized the distinction between a "flick" and "swipe." For example, iMore, a popular website that provides detailed help guides, product recommendations and reviews, and other Apple related content, warns its users: "Swipe up slightly. (Don't flick. …)":



Ex. 2023 [iMore-Website] 6; Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 81.

While Petitioner Google itself equates flick and glide/swipe ***in this IPR***, Google documents not prepared for this IPR differentiate between the two gestures:

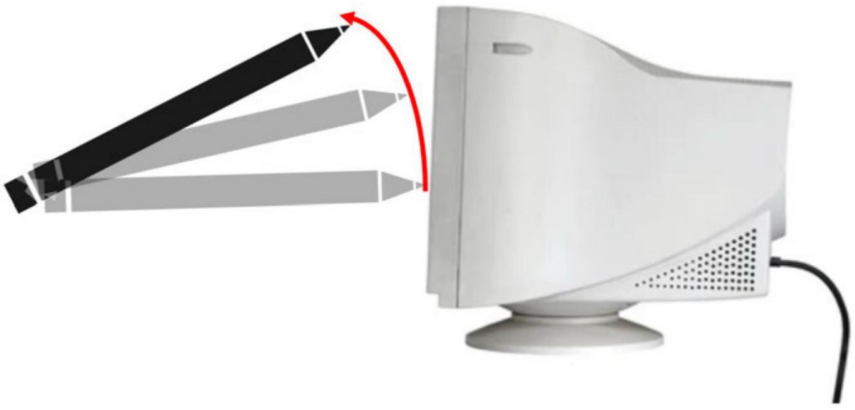
> The Android operating systems developed by Petitioner Google also differentiate between a swipe and flick. For example, an Android application for cars recognizes a "flick" gesture in order to "simulate[] a fast spin of the rotary." Ex. 2025 [Test-Android-apps-for-cars] 21. Similarly, Petitioner Google in release of Android 4.0 distinguished between a user "flick[ing] through photo stacks," and a user "swip[ing] left or right." Ex. 2026 [Ice-Cream-Sandwich] 5.
>
> In later releases of Android, it appears that the name of the "flick" gesture is changed to a "fling" gesture, but the same distinction between a swipe gesture and a flick/fling is maintained. For example, in some versions of Android, applying a "fling" gesture to a scroller creates a momentum effect where the scroller initially moves at a given velocity, and gradually slows down. Ex. 2027 [Scroller] 8. In contrast, a "swipe" gesture is used to close an application. Ex. 2028 [Navigation] 1.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 82-83.

As Dr. Rosenberg explains, this distinction is not merely semantics, but reflects two distinct motions with different user experiences, just as, for example, walking and running are distinct movements. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 84; *compare* Ex. 2018 [Wobbrock-Depo.] 87:14-25 (Petitioner's expert stating that "I haven't carried out a flick versus swipe analysis or comparison."); 90:20-24 (similar).

Consistent with the plain meaning in 1991, 2002 and even today, a POSITA would have similarly understood that Robertson's use of "flick" is also a jerky, quick and short motion that is distinct from a swipe gesture:

> The graphics below demonstrates the general shape of a flick gesture on a 1991 desktop based on the plain meaning of "flick":

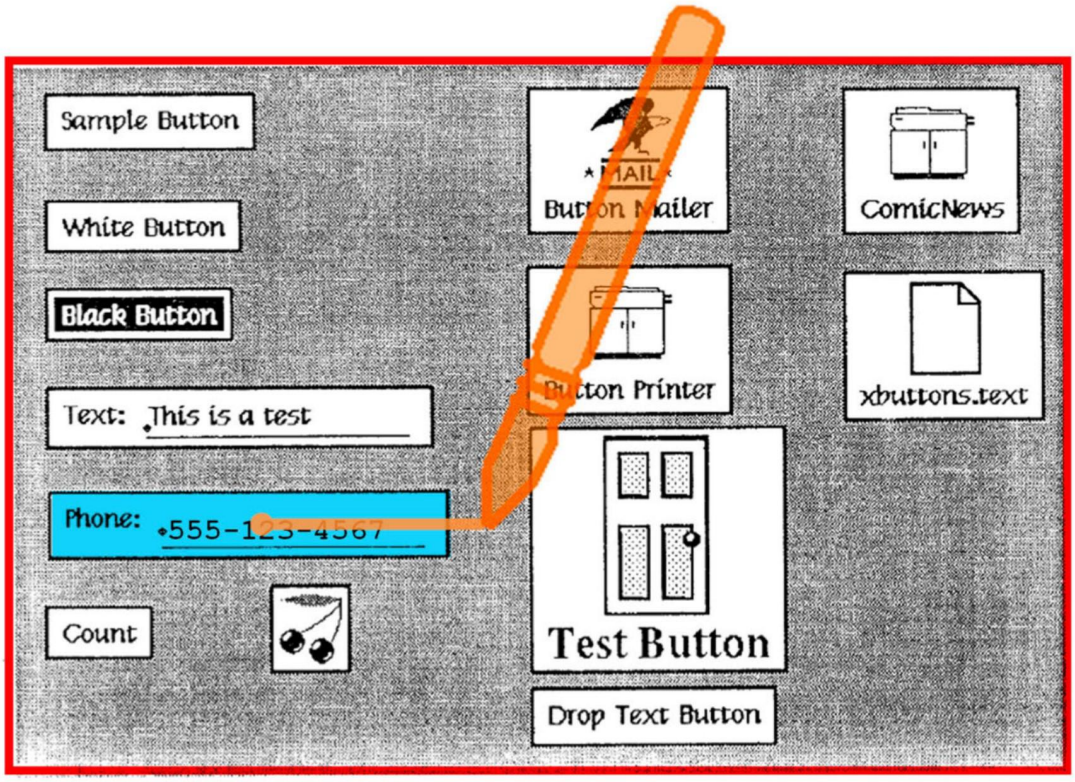


> In a flick gesture, the pen would touch the screen, but only moves on the screen for a very short distance and is quickly lifted from the screen

in a "jerky" motion. This is also consistent with how, for example, Apple uses the meaning of a "flick" gesture today.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 85-86.

In attempting to read Robertson's flick on the claimed gliding/swipe, Petitioner and its expert incorrectly annotate Robertson's Figure 1 to inaccurately represent Robertson's flick gesture:



Petitioner's Incorrect Depiction Of Robertson's Flick

Pet., 26; Ex. 1003 [Wobbrock-Decl.] ¶ 107. As can be seen, Petitioner attempts to show the flick as a movement on the screen (orange line) that appears to be several

inches long. Petitioner and Dr. Wobbrock, however, do not explain why Robertson's "flick" would look like this. *See* Pet., 25-26, Ex. 1003 [Wobbrock-Decl.] ¶¶ 105-110. Certainly, this is inconsistent with the plain meaning of what a "flick" is. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 88. Notably, Robertson never describes its flick gesture, and it certainly does not describe it in any way inconsistent with its plain meaning of a short, jerky motion. Dr. Wobbrock's 30-year later, made-for-litigation drawing not tied to Robertson's actual disclosure cannot render the claims obvious.

In misrepresenting Robertson's flick gesture, Petitioner appears to rely on general language in Robertson that a "gesture" "can," but need not, "move outside the XButton." Ex. 1005 [Robertson] 43. But that statement does not support Petitioner's deviation from the plain meaning of a "flick":

> First, Robertson has many different gestures, and there is no reason to believe that its reference that some gestures "can" move outside of the XButton was intended to refer to a "flick." Second, Robertson's statement that a gesture "can" move outside of the XButton is not intended to state a principle of operation in Robertson that its gestures are long and extend outside of the XButton; to the contrary, it is stated to identify problems that occur if the gesture in fact moves outside of the XButton. Ex. 1005 [Robertson] 43. Moreover, given that a gesture can be initiated anywhere inside an XButton, Robertson's reference likely relates to instances where the gesture is initiated close to the edge

> of the XButton—not as Petitioner has shown, with no support, starting in the middle of the XButton and extending all the way outside of it.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 89. Since Robertson intends for gestures generally to occur within XButtons, there is no reason to think Dr. Wobbrock's made-up drawing reflects what Robertson discloses as a flick.

Other indicia in Robertson similarly support the short, jerky nature of its flick, consistent with plain meaning:

> For example, Robertson also discloses that a drag-and-drop operation can be performed on its XButtons. Ex. 1005 [Robertson] 39, 40, 42. If Robertson's "flick" was really a glide, its system could not distinguish between the flick and a drag-and-drop. In other words, as a user placed the mouse/pen on an XButton, and moved the mouse/pen across the screen like a glide (a longer, continuous and effortless motion), then Robertson's system would not know whether the movement of the mouse/pen was a drag-and-drop operation or a glide gesture. In contrast, a "flick" gesture is readily recognizable due it its higher speed and shorter distance—which, as Robertson indicates, is not intended to (even if it "can") go outside of the XButton itself.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 90.

Therefore, Petitioner fails to prove that Robertson's "flick" discloses the claimed "gliding … away" gesture.

3. Robertson's Insert Gesture Does Not Disclose The Claims For Multiple Reasons.

The Petition also relies on Robertson's "insert" gesture for the disclosure of the claimed "gliding … away." Pet., 26-27. Robertson describes this gesture to be "like an editor's caret." Ex. 1005 [Robertson] 40. Petitioner's argument fails because the "insert" function does not (a) "activate" the function that is represented (it instead takes a different, non-represented, action); (b) disclose "gliding … away."

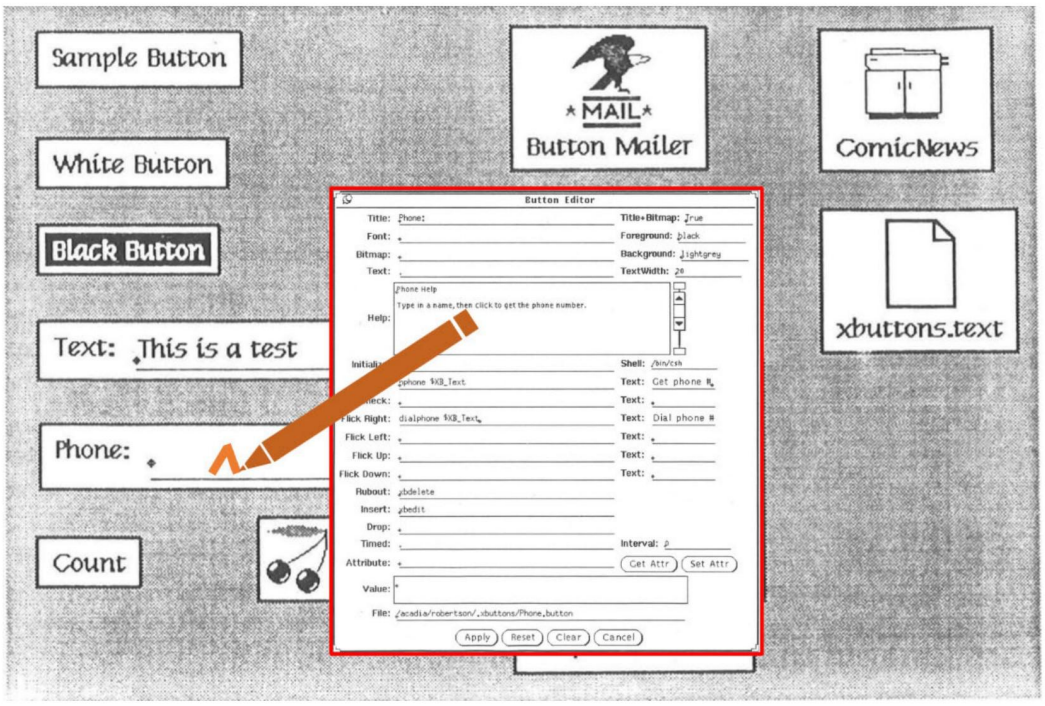
a. *Robertson's Insert Gesture Does Not "Activate" A "Represented" "Function."*

The claims require "a representation of a function" wherein "the function is activated ..." Thus, the ***represented function*** must be activated. Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 93-95. The '879's specification confirms this. Ex. 1001 ['879] 4:4-6, 4:13-23, 4:36-38, Figs. 1, 3, 5. Petitioner's reliance on Robertson's "insert" gesture fails to demonstrate that the "represented function" is activated. Rather, a different, unrepresented action is taken.

Specifically, Robertson's insert gesture does not activate an XButton, *i.e.*, the ***represented*** function. "Insert" instead activates a different feature (the button editor) which is not represented at all:

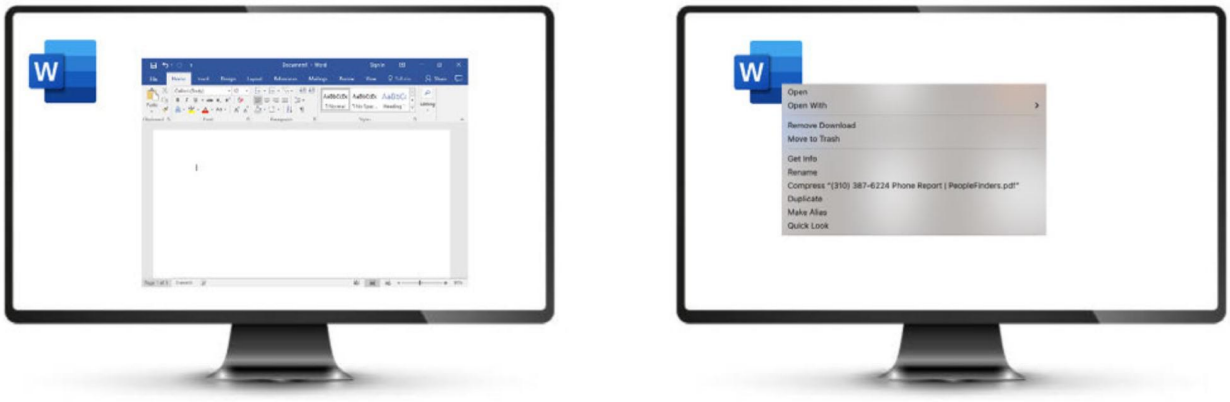
> In Robertson, "[t]he Insert gesture (made like an editor's caret) defaults to *xbedit,* which invokes the structured button editor." Ex. 1005 [Robertson] 40.

When the insert gesture is performed on ***any*** XButton, the button editor for that Button is opened, which permits the user to modify the button by, for example, changing its name. *Id.*, 41. A POSITA would not have considered Robertson's Phone XButton (or any of the other XButtons shown by Robertson) to be a representation of *xbedit* and opening of a button editor. The Phone XButton is not there so that a user can open the edit window for that Button; rather, it is there so that the user can dial a phone or look up a contact—and ***that*** is the function the XButton represents. … Thus, as shown below, when the caret gesture is performed on the Phone XButton, a phone number is not dialed, the phone number for a contact is not shown; rather, the button editor appears to allow the user to format the XButton:



The Phone XButton does not represent xbedit any more than the Microsoft Word icon on a Microsoft Windows desktop "represents" the

function of right clicking on the icon, a default set of items appearing regardless of the icon:



A Microsoft Word Icon represents the function of opening a MS Word document (left), not the action of right clicking on it to rename, delete or copy the icon (right).

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 96-98.

b. *Petitioner Fails To Prove Robertson's "Insert" Is "Gliding … Away."*

Robertson describes this gesture to be "like an editor's caret." Ex. 1005 [Robertson] 40. An editor's caret—"^"—has a sharp angle and is usually smaller than the text.

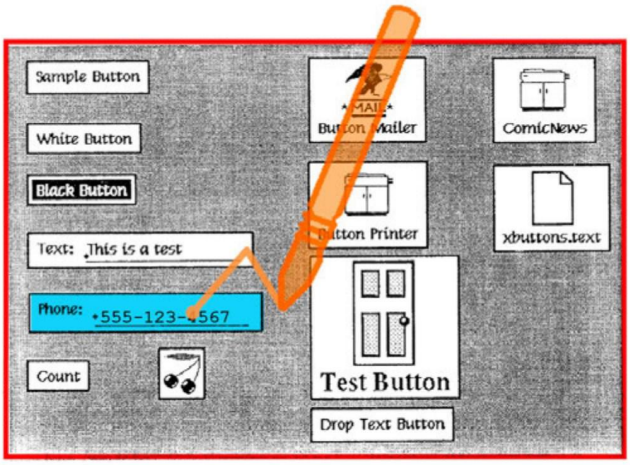
Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 99.

As Dr. Rosenberg explains, Robertson's insert gesture does not disclose "gliding … away" or a swipe:

> In terms of either mechanical movement or user feel, and for much of the same reasons as "flick," the "insert" gesture does not resemble a "gliding … away"/swiping gesture. Insert, like "flick," is a jerky movement—in this case two jerky movements connected together. This is apparent by the sharp edge of an insert gesture. If one were to attempt drawing the insert gesture with a pen, while keeping the overall size of the gesture small enough to be interpreted as a gesture on a screen, with a sufficient speed such that a typical device would recognize that as a single gesture, one would experience drawing a first sharp, short line, and then sharply changing direction and drawing a second sharp, short line. Just like flicks, these sharp, jerky lines of an insert are very different from "gliding … away."

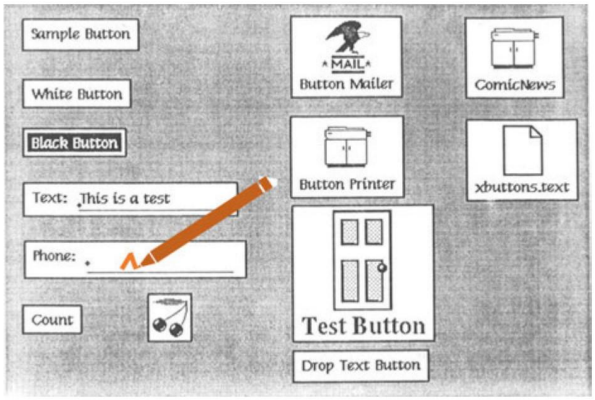
Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 100.

In attempting to depict a small caret gesture as disclosing "gliding," Petitioner again stretches the gesture beyond what a POSITA would understand. Specifically, Petitioner draws the insert gesture as being so large that it even extends to the adjacent XButtons:



Petitioner's Incorrect Depiction Of Robertson's Insert Gesture

Pet., 27. This is no caret. And why would it extend to neighboring XButtons? This is a caret (with the correct approximate scale of the size of the pen compared to a typical desktop of 1991):



Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 101-102. There is simply nothing in Robertson that supports Petitioner's stretching the Insert gesture (and the truth) in this fashion.

C. The Petition's Robertson-Grounds Fail To Disclose "Wherein The Representation Consists Of Only One Option For Activating The Function."

Petitioner contends Robertson discloses the limitation: "a touch sensitive area in which a representation of a function is provided, wherein the representation consists of only one option for activating the function." Pet., 23. This limitation was added during prosecution to distinguish the Hirshberg reference.

Each of Hirshberg's softkeys corresponded to multiple letters of the alphabet, and the user was provided with several options regarding what letter of alphabet to activate depending on whether the movement of the finger away from the softkey was up, down, left or right. S*ee infra*. This new limitation, unlike Hirshberg, "consists of only one option for activating the function." As will be explained below, Robertson is like Hirshberg, because Robertson's different gestures provide the user with several options for activating the function. Thus, it fails to meet the "one option" limitation.

The limitation "wherein the representation consists of only one option for activating the function" was added to overcome Hirshberg. Ex. 1002 [Prosecution-History] 514-515, 535, 540-544. As Dr. Rosenberg explains:

Hirshberg discloses a system directed at enabling the use of a full alpha-numerical keyboard utilizing the limited number of soft keys that could fit on a small screen. Ex. 2030 [Hirshberg] ¶ [0003]. Hirshberg describes that each soft key on the screen can potentially represent multiple characters, and the direction of the movement of the finger after touching a specific key would determine the specific character that would be typed. *Id.*, ¶¶ [0056]-[0058]. For example, in the annotated version of Hirshberg's Fig. 2A below, once the stylus/finger touches the softkey, if the stylus/finger moves up towards zone 300, then the letter H will be typed. *Id.* Similarly, if the stylus/finger moves right towards zone 302, then the letter I will be typed. *Id.* Letter G and number 4 are similarly typed by moving to the left and downwards, respectively. Thus, in Hirshberg, the representation of the function (the soft key) provides the user with multiple options on what action to take depending on the input gesture.

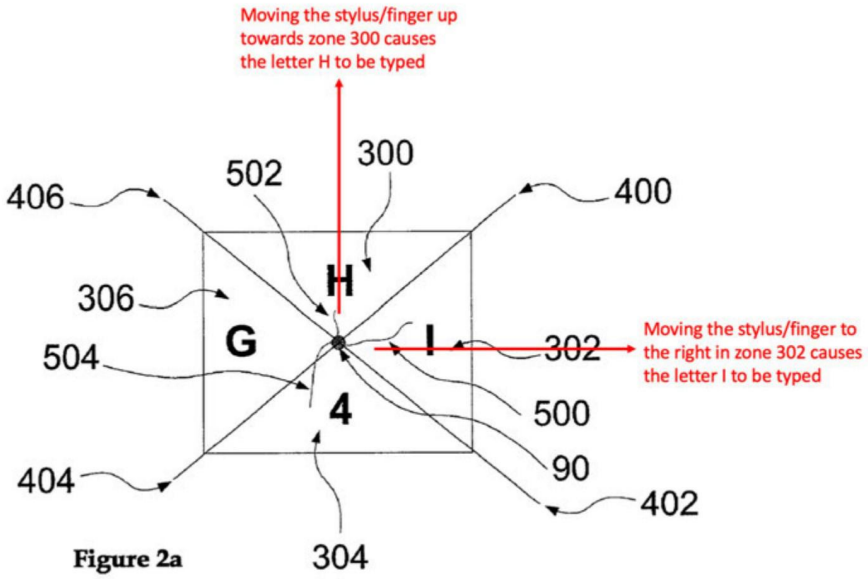


Figure 2a

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 104.

> The Applicant distinguished Hirshberg by this amendment:
>
> In order to further distinguish the claimed invention over Hirshberg, applicant […] amended claim 1 to include the limitation that the representation of the function consists of only one option for activating the function.

Ex. 1002 [Prosecution-History] 542. Thus, the Applicant required that there be only a single option with respect to the representation of the function regardless of the direction of "gliding … away." Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 105.

Petitioner and its expert apply an incorrect understanding of the one-option limitation in asserting that Robertson discloses it. Specifically, they interpret the one-option limitation to require that each function associated with the representation of the function can be activated only by one gesture. Pet., 23 ("Robertson's 'Phone' button (blue) activates the 'dialphone' function (green) by only a 'flick right' gesture (orange)."). Petitioner's expert also admitted to his similar understanding. Ex. 2018 [Wobbrock-Depo.] 53:5-12, 52:2-17. While Petitioner applies an incorrect understanding of the term, its expert did not "recall whether [his] consultation of the prosecution history particularly focused or centered on" the meaning of the one-option limitation. *Id.*, 98:16-20.

Applying its incorrect understanding of the one-option limitation, Petitioner contends Robertson's Phone XButton discloses it. Pet., 23-24. However, Robertson is just like Hirshberg in that it provides the users with multiple options

to choose from in terms of what to activate in the key depending on the input gesture:

> Robertson's XButton provides the users with multiple options to choose from for what action to activate, depending on the gesture applied to the XButton: showing the telephone number (click), dialing the telephone number (flick right). Ex. 1005 [Robertson] 40-41. Petitioner's expert does not dispute the relevant aspects of the operation of Robertson. Ex. 2018 [Wobbrock-Depo.] 79:17-22 ("In the example that is shown in Figure 3, there are four distinct gestures that map to four distinct commands."); 78:19-20 (same).
>
> In this respect, Robertson is just like Hirshberg, and the claims of the '879 were amended with the one-option limitation to distinguish the '879 from Hirshberg. Specifically, just as each of Hirshberg's soft keys depicted multiple distinct letters and provided the user with the option of which letter to choose from depending on the input gesture, Robertson similarly provides the user with several options of which action to activate with a given XButton depending on the input gesture. Therefore, a POSITA would understand that Robertson fails to disclose the one-option limitation.
>
> In this respect, both Robertson and Hirshberg represent the prior art upon which Neonode improved. For example, users praised Neonode's user interface for its "advanced simplicity" and "intuitive" gestures. Ex. 2031 [Trend-Hunter-Article] 1; Ex. 2033 [tnkgrl-Media-post] 1. One aspect of this simplicity is the one-option limitation where the user does not have to memorize a host of gestures to choose from, and the

function associated with each. Instead, the user can select one option on the representation of the function.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 107-109.

Furthermore, the Petition fails to show (or even argue) why a POSITA would have modified Robertson to disclose the one-option limitation. As Dr. Rosenberg explains, "[p]roviding the user with multiple options for selecting what to activate in an XButton is a fundamental feature of Robertson, and one of the points of advancement of Robertson over its predecessor system called Rooms. Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 110-111, *citing* Ex. 1005 [Robertson] 36. Robertson then continues to list "support[ing] multiple actions" as "[***an***] ***additional goal***[] for XButtons." *Id.*, 37. As Dr. Rosenberg also explains, " had Robertson desired its XButtons to support a single action, there was no need for it to rely on gestures (such as the flick gestures) as a simple tap could have activated the single action XButtons." Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 111.

D. Petition's Robertson-Grounds Fail To Disclose Or Render Obvious The Preamble For Two Reasons.

The claims recite a "***computer program code***, which, when ***read by a mobile handheld computer unit***, allows the computer to present ***a user interface for the***

mobile handheld computer unit."[3] Petitioner, however, fails to show (i) a mobile handheld computer unit, or (ii) that the computer program code is read by the same device displaying the user interface.

[3] While this language appears in the preamble, Petitioner does not dispute that it is limiting. Pet., 12. A preamble is limiting where it provides antecedent basis for subsequent limitations or states a "necessary and defining aspect of the invention." *On Demand Mach. Corp. v. Ingram Indus.*, 442 F.3d 1331, 1343-44 (Fed. Cir. 2006); *C.W. Zumbiel Co. v. Kappos*, 702 F.3d 1371, 1385 (Fed. Cir. 2012). Here dependent claims 2-12 refer back to this limitation by requiring "the user interface" and claim 6 also requires "the mobile handheld computer unit." Moreover, the claims, the specification, the embodiments, and prosecution history all confirm that a "mobile handheld computer unit" is a necessary and defining aspect of the invention. *See* Section III.A, incorporated by reference; Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 112-115 (*citing* '879 Title, Abstract, 1:6-7); Ex. 1001, 1:41-42, 1:49-61, 1:65-67, 3:1-15; 3:50-51, 6:4-6; Figs. 1, 11, 12, 13, 14; Ex. 1002 [Prosecution-History] 301, 339-340 (same).

1. Petitioner's Robertson-Grounds Fail To Disclose Or Render Obvious "A Mobile Handheld Computer Unit."

The Petition relies on Robertson or, in the alternative, the combination of Robertson and Maddalozzo, for the disclosure of "a mobile handheld computer unit." Pet., 12. However, Robertson is very clear that its system is a desktop system, and not a "mobile handheld computer unit." *See* Section III.D.1(a). Furthermore, Petitioner does not show why a POSITA would have been motivated to implement Robertson's XButtons in a "mobile handheld computer unit" of Maddalozzo. *See* Section III.D.1(b).

a. *Robertson Does Not Disclose Or Suggest "A Mobile Handheld Computer Unit."*

Petitioner contends Robertson "discloses or suggests" "a mobile handheld computer unit." Pet., 12. This is nonsense. Robertson is addressed towards a "desktop" not on a "mobile handheld computer unit." *See* Section III.A.1. Robertson's title is "Buttons as First Class Objects ***on an X Desktop***" (Ex. 1005 [Robertson] 35) Robertson's system is "[a] high-level user interface toolkit, called XButtons, [that] has been developed to support on-screen buttons as first class objects ***on an X window system desktop***." *Id.* Robertson refers to a "desktop" ~40 times but never to a "mobile" or "handheld" device. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 117.

Petitioner's reliance on Robertson's reference to "pen-based gestural input" to disclose a "mobile handheld computer unit" is also misplaced, based upon the incorrect premise that Robertson "does not specify the type of computer unit."

> Dr. Wobbrock states that "Robertson discloses a computer unit for presenting its user interface for "pen-based gestural input[s]," but does not specify the type of computer unit." Ex. 1003 [Wobbrock-Decl.] ¶ 87. On that premise he states that "Robertson's user interface with 'pen-based gestural input[s]' suggests to one skilled in the art that the device could be a mobile handheld computing unit." *Id.*
>
> Dr. Wobbrock's premise and conclusion are both incorrect. As shown above, Robertson clearly and repeatedly describes his system as a desktop system. While Robertson does mention that "XButtons support mouse-based or pen-based gestural input in addition to simple 'pressing,'" Ex. 1005 [Robertson] 39, this simply indicates that pen-based input may also be used in Robertson's desktop system instead of a mouse. In fact, Robertson clearly states that its gesture is input by "mouse or pen." *Id.*

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 118-119. Similarly, Petitioner relies on Robertson's statement that the programming language corresponding to the action taken by the button after the input gesture is preferably the Unix-Shell, but can also

be Lisp. Ex. 1005 [Robertson] 39, *cited* by Pet., 13.[4] The Petition then concludes that because Robertson discloses multiple potential programming languages for its action programming, then "Robertson suggests that the computing device can be a mobile handheld computer unit." Pet., 13. But the choice of programming language between Unix and, for example, Lisp, says nothing about Robertson's expressly disclosed desktop system being a mobile handheld computer unit. These programming languages are not exclusively, or even likely, implemented on a mobile handheld computer unit. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 120.

b. *The Petition Fails To Show Why A POSITA Would Have Implemented Robertson's XButtons In Maddalozzo's Device.*

In the alternative, Petitioner relies on importing Robertson's XButtons on a mobile handheld device as allegedly disclosed by Maddalozzo for the disclosure of "a mobile handheld computer unit." Pet., 15-16; *see also* Paper 19 [Institution-Decision] 35-36. However, the Petition fails to show any legally sufficient motivation for this combination.

Maddalozzo describes a portable text editing document:

> Maddalozzo describes a "portable computer" that allows the user to type and edit text documents without the use of a physical mouse or

[4] Other references to Lisp in Robertson are in the context of discussing other systems. *See, e.g.*, Ex. 1005 [Robertson] 36-37.

keyboard. Ex. 1006 [Maddalozzo] Abstract, 2:33-36, 5:31-42, 6:20-35. Maddalozzo's device, with text document 82 open, is shown in its Fig. 4, reproduced below:

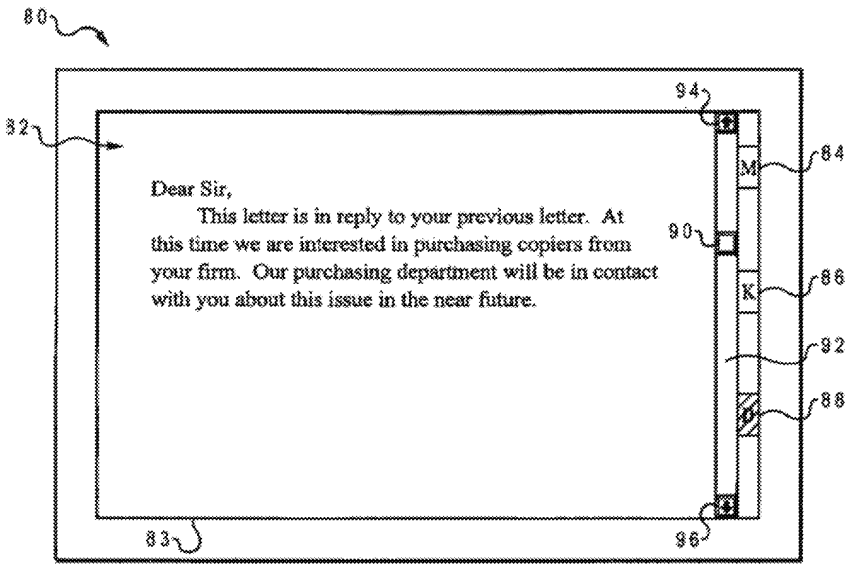


Fig. 4

Maddalozzo's device contains three keys. Key M (84) causes the device to go to the "mouse" mode, which presents a mouse cursor on the screen, but can be operated by fingers instead of the mouse to move the cursor. Ex. 1006 [Maddalozzo] 6:15-35; Fig. 6. Key K (86) takes the device into the keyboard mode, where a keyboard is presented on the screen when the user puts his/her hands on the bottom half of the screen. *Id.*, 6:36-52. Key D (88) takes the device to the normal display mode. *Id.*, 6:17-19.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 122-123.

Petitioner argues a POSITA would have been motivated to implement Robertson's XButtons in Maddalozzo's system because both references are

"directed to touch-based user interfaces" and have certain alleged similarities. Pet., 15. But Robertson is not "***directed*** to touch-based user interfaces;" Robertson is "focuse[d]" on user tailorable first class objects on X window system desktops. Ex. 1005 [Robertson] 35. Whether or not the system is touch-based is irrelevant to Robertson, which states only in passing that its gestures can be input with a "mouse or pen." *Id.*, 39; Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 124.

The Petition's additional purported motivations fundamentally rest on the unproven presumption that Robertson's XButtons are "simple[r]," "more convenient" or "more useful" for the user. Neither Petitioner nor its expert attempt to show that (or how or why) XButtons are simpler, more convenient or more useful in Maddalozzo's already fully-functioning system. There is no showing that Robertson's "first class desktop objects" have any utility in Maddalozzo nor explanation of how Robertson's multi-action XButtons, requiring numerous gestures, are "simpler" or "more convenient" than Maddalozzo's pre-existing interface. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 125. There is simply an abject failure of proof by Petitioner.

Furthermore, Maddalozzo is already a complete, portable system, with a small form factor. Ex. 1006 [Maddalozzo] Abstract, Fig. 1. It already functions without a physical mouse or keyboard. *Id.*, 6:20-48. It already provides a simple, user friendly interface. *Id.*, Fig. 4; Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 126.

Petitioner does not point to any deficiency, problem or reason as to why a POSITA may be motivated to modify its system. When two references independently operate effectively, the POSITA is not motivated to combine. *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1369 (Fed. Cir. 2012); *Hulu LLC v. Sound View Innovations*, IPR2018-00582, Paper 34, 20-21 (PTAB Aug. 5, 2019) (informative) (rejecting combination where Petitioner had not "adequately supported" why it would have been considered a "good idea" to modify).

Further still, even if Robertson's XButtons were somehow "better" than Maddalozzo's buttons, a generic desire "to build something better" is insufficient, without more, to demonstrate a POSITA would have combined references in a particular way to meet an invention. *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012); *Samsung Austin Semiconductor, LLC v. Red Rock Analytics, LLC*, IPR2018-00556, Paper 18, 21 (Aug. 20, 2018) ("statements of *increased utility* and *minimal* modifications are generic, and fail to provide necessary factual support—they are akin to stating in a conclusory fashion that the combination 'would have been obvious.'").

Petitioner also argues that "Robertson's teachings would have been implemented on X-based handheld devices (e.g., laptop computers, PDAs) to take advantage of operations the 'Unix Shell' command language provides to design gesture-based buttons that are more useful and convenient for users." Pet., 17.

Again, Petitioner provides no analysis whatsoever as to why any of these purported benefits have any application to, or would improve, Maddalozzo's system. Notably, unlike Robertson's system where users may design XButtons in its more research-oriented setting, whether through a Unix command window ("Shell") or otherwise, Maddalozzo's end-users could not redesign Maddalozzo's user interface, which are already pre-designed and installed on the device. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 127.

2. The Petition Fails To Show That Its Robertson-Grounds Disclose Or Render Obvious The Claimed Computer Program Code Being "Read By A Mobile Handheld Computer Unit."

The claims require that the "computer program code" that results in the presentation of the claimed "user interface" be "read by a mobile handheld computer unit." In other words, the processor that executes the code to display the claimed user interface must be on the same mobile handheld computer unit that displays the user interface. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 128.

Petitioner relies upon Robertson's user interface computer program code, but (correctly) does not allege that Robertson's code is stored on the same device that displays the resulting user interface, arguing instead that a POSITA "would have found it obvious to store Robertson's user interface computer program code in a non-transitory computer readable medium of the laptop, PDA, or other handheld computing device to keep the program code being executed in the same

device as the device executing it to provide a unitary system," arguing further that this was "conventional." Ex. 1003 [Wobbrock-Decl.] ¶ 86; Pet, 14.

Petitioner's proffered motivation fails because providing a "unitary system," or the alleged "convention" of storing the computer program code on the same device displaying the user interface, is at odds with central aspects of the X window system. Robertson describes a user interface toolkit developed "to support on-screen buttons as first class objects on an X window desktop." Ex. 1005 [Robertson] 35. The use of the X window desktop system is integral to Robertson, as it achieves its objective of "first class desktop buttons" through the use of the X window desktop system. *Id.*, 38 ("XButtons breaks free of this dependence on an embedding application by providing buttons as first class objects on the X desktop."); Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 129-130. But, unlike the claimed invention, the X window system is designed for a distributed, not a "unitary" environment:

> The X window system (also referred to as just "X" or "X11") is a network-transparent windowing system. That means that it allows the system to "de-couple" the display of the user interface from the processor that provides the information to be displayed. A typical use case for the X window system is where there is a high power computer ("main frame") located centrally in a network, and then there are numerous "thin" clients scattered around the network at user locations. The "thin" clients have very limited processing capabilities of their

> own, but are merely displays that send the user input information to the remote, centrally located computer for processing, and then display the results back to the user once received from the central computer. The X window system provides multiple benefits. First, it allows a large system to save resources by providing only one central processor (main frame) for use by all the users, with each user station having only a thin client device. Second, it allows the users to work collaboratively on the same applications and datasheets and see the same results from the central processor.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 131. Petitioner's own exhibit, a book on X window systems, confirms that the main characteristic of the X window system is network transparency. Ex. 1027 [X-Window-System] 33.

Petitioner provides no explanation of why a POSITA would choose to utilize an X window system and then un-do its primary purpose of de-coupling processing and display (the opposite of a unitary system). For the same reason, Petitioner does not show why it was "conventional" to utilize a "unitary system" in X window systems. *Netflix Inc. v. DivX, LLC*, IPR2020-00052, Paper 82, 39 (PTAB Apr. 22, 2021) (rejecting combination that would "chang[e] the basic principle of Vehviläinen's operation, consequently dissuading the combination with Kadono."); *see In re Ratti*, 270 F.2d 810, 813 (CCPA 1959) (proposed combination is improper where it would change basic principles of operation of one of the references); *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 F. App'x.

755, 759 (Fed. Cir. 2015) (similar). Robertson's client-server architecture further confirms the above. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 133.

Accordingly, for all the reasons set forth above, Petitioner's Robertson-grounds fail.

IV. THE TARPENNING GROUNDS FAIL.

The Petition presents Grounds 4-6 based on Tarpenning but only Ground 4 (obviousness in view of Tarpenning alone) challenges independent claim 1, with Grounds 5-6 depending upon it. As the Board found, each of these grounds fail. ID, 42 ("we have doubt that Petitioner shows sufficiently that an ordinarily skilled artisan would have had reason to modify Tarpenning to arrive at claim 1 as Petitioner asserts.").

Petitioner maps claim 1's "representation of a function" to Tarpenning's menu keys 84 and 86. Pet., 73 ("Book menu key 84 and library menu key 86 are representations (blue) for their respective menu display functions ….") The Petition admits that Tarpenning's keys 84 and 86 are not activated by the claimed "gliding … away," but are activated by simply pressing the key. Pet., 74-76; *see also* Ex. 1009 [Tarpenning] 6:41-43. The Petition thus proposes that a POSITA would have modified Tarpenning's keys to be activated by "gliding … away." Pet., 81.

First, the concept of "gliding … away," which goes to the heart of the claimed invention and was the subject of significant praise, commercial success, and licensing/acquiescence (Section II), is entirely absent from Tarpenning—it is simply manufactured by Petitioner out of thin air. Therefore, the Petition fails for failing to show "gliding … away." *See* Section IV.A. Second, even if Petitioner had somehow shown "gliding … away," it shows no motivation for a POSITA to implement it in Tarpenning. Petitioner imagines (again) two supposed problems in Tarpenning—but fails to prove these are actual problems or that a POSITA would have looked to the non-disclosed "gliding … away" gesture to remedy them. *See* Section IV.B.

A. Petitioner Fails To Show "Gliding … Away."

Tarpenning discloses an e-reader that includes four keys (80, 82, 84, 86), each of which is recessed within a housing, as shown in reproduction of its Fig. 2:

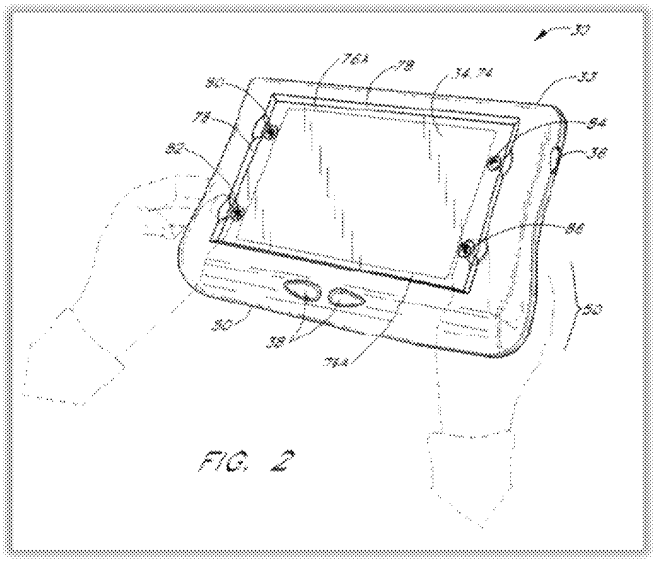


FIG. 2

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 135.

Each of Tarpenning's keys is activated by pressing a key, not by "gliding … away":

> When the user ***presses*** the book menu key 84 or the library menu key 86, the device 30 displays a book menu 85 (FIG. 6) or a library menu (not shown), respectively.

Ex. 1009 [Tarpenning] 6:41-43; Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 136.

"Gliding … away" is entirely absent from Tarpenning. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 137. Attempting to remedy this deficiency, Petitioner argues that Tarpenning actually discloses "gliding … away" in a different context when it uses a drag-and-drop operation to assign a function to its hotkey by dragging the hotkey and dropping it on the function that is desired to be assigned to it. Pet., 78-79. Petitioner is grasping at straws. Dragging the hotkey does not, however, "activate the function" as required and, moreover, a drag-and-drop operation is not the claimed "gliding … away." As Dr. Rosenberg explains:

> Key 82 in Tarpenning is a hotkey, which means that a user can assign a custom function to it. Ex. 1009 [Tarpenning] 6:36-38. The user can assign a specific function to the hotkey by dragging the hotkey and dropping it on the desired function to be assigned to it, or, conversely, by dragging the desired function and dropping it on the hotkey. *Id.*, 7:39-48, 8:1-4, Abstract. For example, in a reproduction of Tarpenning's Fig. 7, a user can assign a desired function, such as "Add

Note" to the hotkey by dragging the hotkey 82 and dropping it on the "Add Note" item:

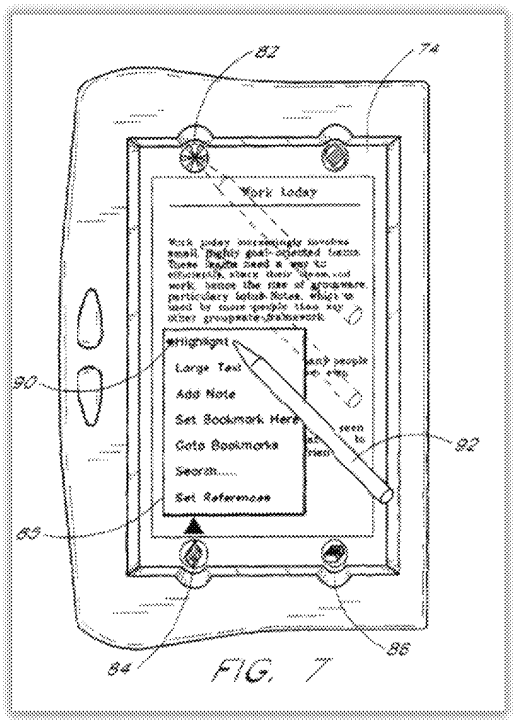


FIG. 7

Petitioner relies (Pet., 79-80) on this drag-and-drop operation to argue that Tarpenning discloses the concept of activating a key by "gliding … away." This argument fails for at least two reasons. First, this assignment procedure does not "activate" anything—it merely assigns the desired function to hotkey 82, which is then activated by the user by pressing the key, not by "gliding … away." In fact, Tarpenning never refers to its drag-and-drop operation as "activating" anything, but as, for example, "defining a function" for the hotkey. Ex. 1009 [Tarpenning] 7:39-41, 8:1-3.

Second, a drag-and-drop is fundamentally different from "gliding … away." "Gliding … away" is a swipe that activates a function. In contrast, in a drag-and-drop operation, some form of the item is

> logically dragged (and behaves as if it is being logically dragged) with the movement of the stylus and is dropped at the location where the stylus leaves the screen.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 138-140.

If there was any doubt that "gliding … away" is fundamentally distinct from a drag-and-drop, the prosecution history removes it. In distinguishing the Hoshino reference, the Applicant made clear that "gliding ... away" is distinct from "drag-and-drop" operations:

> ***Hoshino does not teach gliding*** a finger ***away*** from an icon. ***Instead, Hoshino teaches a drag-and-drop operation*** for moving an icon.

Ex. 1002 [Prosecution-History] 498. Accordingly, the Applicant distinguished Hoshino's "conventional" "drag-and-drop" "operation" from the "novel" "touch-and-glide" operation of the "[c]laimed invention":

Some distinctions between claimed invention and Hoshino		
	Claimed invention	**Hoshino**
Objective	Novel touch-and-glide user interface operation	Discriminate between two conventional operations; namely, (1) touch, and (2) drag-and-drop

Id., 497; *see also* Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 141-142.

B. Petitioner Fails To Prove Any Motivation To Modify Tarpenning.

Thus, Tarpenning does not disclose "gliding … away." This is fatal. "Gliding … away" goes to the heart of the claimed invention (Section III.B) and

was the subject of much industry praise, commercial success, and licensing (Section II). Per the Federal Circuit:

> In cases in which "common sense" is used to supply a missing limitation, as distinct from a motivation to combine, moreover, our search for a reasoned basis for resort to common sense must be searching. And, ***this is particularly true where the missing limitation goes to the heart of an invention***.

Arendi S.A.R.L. v. Apple, Inc., 832 F.3d 1355, 1362-63 (Fed. Cir. 2016). The Petition presents two arguments as to why a POSITA would have modified Tarpenning's touch activation with "gliding … away." Pet., 82-83. Both fall well short of the "searching analysis" required to show single-reference obviousness where "the missing limitation goes to the heart of [the] invention."

Petitioner first argues that a POSITA would have substituted Tarpenning's touch activation with "gliding … away" "to prevent users from accidentally opening the menu when they inadvertently touch the screen with their finger or heel of their hand, which would lead to frustration." Pet., 82. This motivation fails for at least three reasons.

First, Petitioner fails to prove that accidental activation is even a problem in Tarpenning. *Arctic Cat Inc. v. Polaris Indus.*, 795 Fed. Appx. 827, 833 (Fed. Cir., 2019) (rejecting motivation where party "failed to prove that these alleged problems with Sunsdahl existed"); *In re Omeprazole Patent Litig. v. Apotex Corp.*,

536 F.3d 1361, 1380 (Fed. Cir. 2008) (similar). Nothing in Tarpenning hints at an accidental activation concern. Rather:

> Tarpenning's touch-sensitive display is recessed within a hard housing. Ex. 1009 [Tarpenning] 6:4-6. The four keys in question are further recessed within semicircular cutouts within the hard casing. *Id.*, Figs. 2, 6-7. Accidental activation of keys within this structure is unlikely.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 145.

Second, even were such concerns proven, there is no evidence that a POSITA would substitute tap activation with "gliding … away" as opposed to a host of other gestures. *In re Omeprazole*, 536 F.3d at 1380 ("Even if a [POSITA] would have recognized that there would be a negative interaction between the enteric coating and the drug core, the district court found that it would not have been obvious to try applying a water-soluble subcoating as a means of solving that problem."). No explanation is given for how "gliding … away" would be less likely to result in accidental activation, or that "gliding … away" was a known activation method to address accidental activation, or that why a POSITA would even consider "gliding … away" as a potential solution to accidental activation. Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 146.

Third, "gliding … away" in Tarpenning's context has drawbacks Petitioner completely ignores. *Arctic Cat Inc.*, 795 F. App'x. at 833 ("The Board must weigh

the benefits ***and drawbacks*** of the modification against each other, to determine whether there would be a motivation to combine."). For example:

> [A]ctivating a key with a simple touch is a simpler design and easier in Tarpenning's context than "gliding … away." Tarpenning is a two-handed device and performing a "gliding … away" with a finger (Ex. 1009 [Tarpenning] 7:44-48) would require the user to extend his/her thumb uncomfortably:

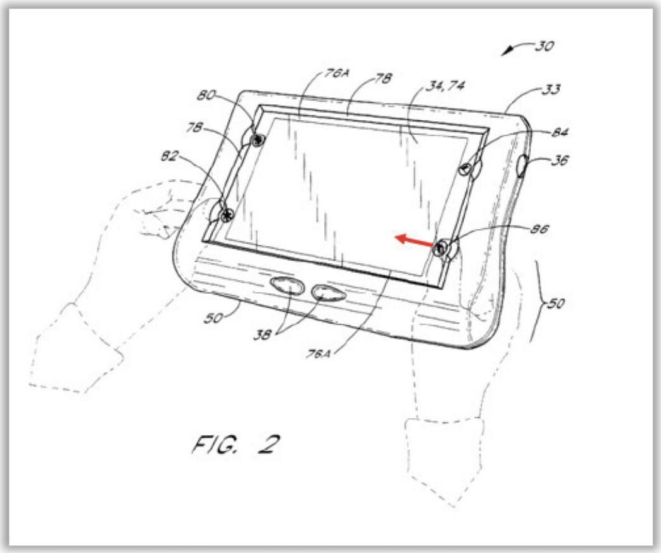


FIG. 2

Ex. 2019 [Rosenberg-2nd-Decl.] ¶ 147. Thus, Petitioner's first motivation fails.

As its second purported motivation, Petitioner argues a POSITA would have substituted Tarpenning's touch activation with "gliding … away" "to allow users to more accurately open sub-menus by gliding up to the desired sub-menu location without lifting the stylus or finger off the screen, which results in faster, more efficient operations for a user." Pet., 82. This motivation also fails.

First, the entire idea of using "gliding … away" to navigate within menu and sub-menu items does not appear anywhere in the record, and is entirely made up by Petitioner out of thin air. Second, a generic desire to make a system "faster" or "more efficient" is insufficient as a matter of law. *ActiveVideo*, 694 F.3d at 1328 (Fed. Cir. 2012). Third, Petitioner's purported motivation is factually baseless. As Dr. Rosenberg explains:

> [T]he premise of this motivation fails. Touch activation of a submenu function would be faster and more accurate than gliding away. This is so because touch activation of a sub-menu item merely requires that the user touch a sub-menu location on the display, whereas gliding away activation would require the user (i) touch the key for that menu to open the sub-menu, then in the same gesture (ii) glide on the display to the location of the desired sub-menu item and then lift off at the desired location. This continuous movement is especially difficult where the user is holding the device in the landscape, as opposed to upright, position (see annotation above), as the menu has to be accessed by moving the finger to the left and right, as opposed to moving up.
>
> Furthermore, it is well known in the human factors community that touch activation of an icon is typically the fastest means of activating an associated function, and it would be here as well.
>
> Petitioner's proposed modification is also less user-friendly. A typical use scenario is where the user is holding the device with one hand, and then trying to navigate the menus with a stylus in the other hand. Once the stylus touches a key and moves towards the screen in order to open

> the menu (per Petitioner's modification), the user would then have to keep the device in one hand, and maintain the stylus in the same position on the screen with the other hand, while the user reviews the menu items to choose the particular options he/she wishes to choose. In contrast, in touch activation, the user simply touches the key, and then can lift his/her hand/stylus from the screen while contemplating the next steps.

Ex. 2019 [Rosenberg-2nd-Decl.] ¶¶ 149-151.

V. CONCLUSION

For the foregoing reasons, Petitioner has failed to demonstrate that any of the claims are unpatentable.

Respectfully submitted,

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Date: April 21, 2022

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Response (the "POR") consists of 13,324 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POR complies with the type-volume limitation of 14,000 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

/ Parham Hendifar /

Date: April 21, 2022

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the following documents were served by electronic service, by agreement between the parties, on the date signed below:

PATENT OWNER RESPONSE

EXHIBITS 2018-2020, 2022-2057

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